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THE

WESTERN JOURNAL,

OF

AGRICULTURE, MANUFACTURES, MECHANIC ARTS,
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AND

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Agriculture and the Mechanic Arts are the basis of Civilization.

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SKELETON MAP
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THE

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VOL. II. JANAURY, 1849. NO. 1.

ART. I.—A SYSTEM OF INTERNAL IMPROVEMENT FOR THE WEST.

In a country long inhabited, where the soil has been reduced to cultivation, the mineral resources ascertained and developed, and great commercial and manufacturing cities established, it requires but little intelligence or foresight to project and locate a system of internal improvement. In such a country, the utility or profits of a canal or rail way may be calculated with as much certainty as any of the more common transactions of business. But in one like the United States, and more especially that part west of the Allegheny Mountains, where but a small portion of the soil has been reduced to cultivation, and immense regions remain totally uninhabited—where the mineral wealth remains unexplored, and even the capacity of the rivers for navigation not well known—it requires much reflection and forecast to project a system of improvement that will be suited to the wants and demands of the country, when more generally settled, and its resources more fully developed.

We must first project a system of commerce corresponding to the physical geography, climate, mineral resources, soil, and vegetable productions of a given region; and also, to its relative location in regard to other countries, before we can arrive at correct conclusions in reference to a system of internal improvement. For, roads and canals being designed as the agents of commerce, should be so located as to conform to its laws, and facilitate its operations.

To enable us to comprehend the philosophy of commerce, we must consider it as one of the great agents of civilization, designed to establish social intercourse and sympathy between the inhabitants of every part of the earth; to the end, that one great principle of moral and social action may every where prevail. To enforce this design the products of the tropics were made to differ materially from those of colder climates; while the convenience and comforts of the inhabitants of these respective regions were made each to depend, in a great measure, upon the enjoyment of the products of the other.

Owing to this provision in the economy of nature, the products of the south seek a market in the north, while those of the north go south for consumption. But as the products of the extremes find a market

also in the central region, this, is indicated as the natural and most convenient place for all parties to meet and exchange their commodities. Hence, the natural and prevailing currents of commerce flow from the extremes of north and south, towards the centre ; and again outward, distributing to each region the kind and quantity of commodities required for their consumption. This is the first great principle to be observed in a system of commerce; but owing to the irregular distribution of the minerals, soils, and waters, this principle is subject to many modifications, which diversify and give to certain branches of commerce every possible direction; yet these are but tributaries of the main current, and when united with it, conform to its laws.

In Asia and Europe, the nature of the social institutions, and the great number of nations differing from each other in their laws, genius, and habits, have tended to countervail and thwart this primary principle of commerce ; and it is partly owing to these causes, that civilization has been so long confined to the more temperate regions.

Among the many advantages which the inhabitants of the Valley of the Mississippi enjoy, there is perhaps, none more important than that which arises from the fact that an entire natural division of the continent, extending through twenty degrees of latitude, with its system of water courses, from their sources to their final outlet to the ocean, is under the control of one government, inhabited by the same race, speaking one language and professing one religion.

When we contemplate a map of this region, it appears plainly, that nature has delineated the outlines of a system of improvement, conforming to the principles of commerce which we have endeavored to illustrate; but she has left the details to be filled up and carried out by the intelligence, enterprise, and industry of its inhabitants.

The Mississippi river, running from north to south, divides the valley into parts nearly equal, and constitutes the great commercial thoroughfare of this region ; and should be regarded as the basis of a general system of internal improvement for the whole west, if not, indeed, for the entire Union. On this river, and within the central region, will be located the great commercial city of the valley—the place of exchange between the north and the south—the centre of a great system of internal improvement, as well as of commerce.

But in a region so extensive and so abundant in all the elements of wealth, there must be many great commercial cities, each having their own scheme of internal improvement ; but still connected with, and constituting a part of the general system. Cincinnati, for instance, has already projected a system of improvement of her own, and with a forecast and enterprise unparalelled in commercial history, has made rapid strides towards its completion. But she does not deem her system complete, without a connection by railroad, with the Mississippi, at St. Louis ; for this will bring her into full and complete communication with the great system of the valley. She is becoming a great producer, and it is her true policy to extend the facilities of distributing her products. When these arrive at St. Louis, they are then at the centre of the great commercial system, and may be thence distributed throughout its remotest range, to every point where a market can be found. In like manner, a great commercial city will, in time, grow

up near our western border, on the Missouri river. This must also have its own system of improvement; but still constitute a portion of the general system, by a connection with the Mississippi river. The principal towns and cities on the Mississippi, will also project systems of their own, calculated to accommodate the country around them; for, in a region so extensive this, if it were even practicable, it would not be good economy to locate every work so as to lead directly to the centre.

It is not a little remarkable, that all the principal cities on the Atlantic coast, when projecting systems of internal improvement adapted to their respective locations, should have aimed to connect their commerce with that of the Mississippi river; and if we trace their routes as projected on the map, we shall discover that they all converge to a point in the central region. The railway from Charleston, in South Carolina, uniting with that from Savannah, in Georgia, will be completed in a few years, to Nashville, in Tennessee, opening a communication with the Mississippi, through the navigation of the Cumberland and Ohio rivers. But it is obvious that this line of railroad will not stop at Nashville; for she will have a system of her own to build up, and will aim to connect with the Ohio river near the mouth of the Wabash, so as to be brought in a more direct communication with the east, and the lakes of the north. This point being reached, the importance of a connection with a road from St. Louis to Louisville, or Cincinnati, will appear so obvious and important, that this short section will doubtless be completed, and thus Charleston and Savannah will be connected by means of a railway, with the great western system, at St. Louis. Again: the road from St. Louis to Louisville, Ky., connects with the system of that city, and the improvements now contemplated in Kentucky uniting with the road from Richmond, Virginia, to the Ohio river, will open a continuous line from Richmond, also, to St. Louis. This is likewise the natural terminus of the lines of improvement from Baltimore and Philadelphia, the former pursuing the valley of the Ohio, and the latter traversing the central region between the Ohio river and the lakes. It will not be long before New York and Boston will be connected by a line of railroad with the Mississippi, at Galena; but it is quite certain that these great cities will not be content to confine their operations to the north, and give to Philadelphia and Baltimore full possession of the great central region. A line of railway from the western end of Lake Erie to St. Louis or Alton, will let them into the heart of the country, and no work in the valley would, perhaps, be more profitable to the stockholders. If the line of railway now in contemplation from Alton to Springfield should be completed, it will, doubtless, be extended sooner or later, so as to intersect with the Michigan road from Detroit to Chicago; and the Michigan and Illinois Canal may also be regarded as another branch of the same system. Again: the railway in contemplation from Mobile to the mouth of the Ohio river, will connect the waters of Mobile Bay and the intermediate country with the commercial system of the Valley of the Mississippi as completely as though the road were continued to St. Louis.

Should all these works be completed, one who was a stranger to

their history, would very naturally conclude that they had been projected by the people of St. Louis, and designed for her especial benefit; and would be astonished to learn that the inhabitants of this place had no hand in the matter, but that each project was conceived and carried out mainly by those residing at the extreme ends of the respective lines, and without concert with each other.

But we have digressed somewhat from our subject. We set out with the intention of saying something in regard to a system of improvement for our own State—a subject about which much can be said, but towards the consummation whereof we fear little can be done for many years yet to come. We are the advocates of every improvement that can in any way promote the development of our vast resources; but we must not permit our zeal to beguile us into the advocacy of impracticable or unprofitable schemes. In this age of steam and magnetism, few individuals can limit their views of internal improvement to anything short of a railway; this is quite natural, but it may well be questioned whether a railway can be constructed between any two points in Missouri with a fair prospect of reasonable profits to the stockholders, for many years to come. There is at present no point in the interior of sufficient commercial importance to afford a fair business to an extensive railway, and the country is not sufficiently settled in any direction, except, perhaps, near the Missouri river, to afford much business on or near the line between any two given points. It is probable, however, that the business of the western counties in the region of the Missouri river, would sustain a road from there to some point on the Mississippi, were it not that boats on the Missouri would still continue to carry a large portion of the freight; but it is quite certain that during the season of high water in the Missouri, a railway could not compete successfully with the river navigation. None can doubt the advantages of such a work to the country, but we apprehend that few would be found willing to invest their money in stock without a reasonable prospect of fair dividends.

The most plausible route for a railroad in Missouri, in our opinion, is on the line between St. Louis and the Iron Mountain. The demand for iron at St. Louis would in all probability be sufficient to support this road; and the material is doubtless sufficient in quantity to supply any demand for centuries to come; and were a railway constructed between these two points, it would probably stimulate the production of iron to an extent sufficient to afford a fair business on the road within a short time after its completion. If, when the proper estimates shall be made, it should be ascertained that such a result could be relied on, no other enterprize that could be projected at an equal expense, would tend so much to increase the wealth of the State. The line traverses a country more abundant in mineral wealth than perhaps any other of the same extent east of the Rocky Mountains; and besides iron, lead, and copper—granite, marble, timber, and fuel would constitute considerable items of transportation; while all the profits arising from these latter articles may be regarded as a clear gain to the wealth of the country.

Where transportation cannot be obtained by water, railways are to be preferred for the transportation of all heavy mineral products, build-

ing material, and fuel, wherever it is necessary to move these commodities beyond the distance of a day's drive with a common team; for, inasmuch as those who are engaged in producing and preparing these commodities for market do not produce stock and grain, the cost of transportation, whether with their own or by the teams of others, is so much to be added to the cost of producing the article; and whether it materially affects the profits of the producer or not, it must, in the end, be paid by the consumer; and it is to be observed, that the same principle enters into the transportation of all commodities, after they have passed from the hands of the producers. But in a country where agricultural labor and agricultural products are redundant, it is the true policy of the farmer to use his own teams in the transportation of his products, although he may not gain in money quite as much by the operation as would be esteemed a fair price *per diem* for his teams and drivers; but there is a limit, of course, beyond which this policy cannot be carried with profit. Few farmers, under the most perfect system of railroad or canal improvement can dispense altogether with the use of their teams; and therefore, the great point to be aimed at, is to extend, as far as practicable, the distance that these teams can be made profitable in transporting their crops. This is the principle which enters into the economy of constructing macadamized and plank roads; for any improvement that enables the farmer to increase the load or rate of travel, is so much directly gained to him, and indirectly to the community.

If the rivers of the State of Missouri were improved by dams and locks, so as to afford slack water navigation as far as practicable, there would exist no great necessity for railways; for such improvements, in connection with macadamized or plank roads, would afford the means of transportation to every part of the State. This is a system strongly indicated by the geography of the country, and is, in our opinion, better calculated to promote the agricultural interest than any other that could be devised with a reasonable prospect of being carried into effect. Such a system could be carried out with our own labor and without the use of any foreign material. These are important considerations; for, by furnishing all the appliances necessary to the consummation of the system, we should avoid that state of pecuniary embarrassment which has almost every where attended the construction of extensive railways.

The subject of plank roads is exciting a good deal of attention in some parts of the Union, and the opinion seems to be rapidly gaining ground that they are in all respects better than macadamized roads; and preferable in an economical point of view to railways, for short distances, except, perhaps, over great thoroughfares of traveling, and between points that furnish constant and large supplies of freight. In timbered districts they can be made for perhaps less than one-half the cost of macadamized roads, and do not require as much to keep them in repair. In the State of New York where they have tested every mode of improvement for the transportation of both freight and passengers, plank roads are rapidly growing into favor. We copy from the Lexington Express the following article, which that paper credits

to the Utica [N. Y.] Herald, for the purpose of showing the favorable opinion entertained of plank roads in that part of the country:

Success of Plank Roads—The people of this section are now reaping the benefit of the Plank Roads. We have now extending from this city four distinct lines of plank roads—one extending to Boonville, on the north, a distance of thirty-two miles; one to Bridgewater, about 20 miles to the south, and soon to be extended twenty miles further; another to Waterville, twenty miles south-west, and to be extended fifteen miles more to Hamilton; and the fourth extending westward to Rome, sixteen miles, and forming, by junction with others at Rome, an uninterrupted plank road communication with the northern parts of Oneida and Lewis counties, and Lake Ontario and Salmon river, in Oswego county. There are also several direct and lateral extensions of this line now in progress and in contemplation, which, when completed, will link the extreme southern counties of the State, and open an easy and rapid communication between sections which have hitherto enjoyed but litle intercourse with each other. All the plank roads that have been put into operation in this State are doing a prosperous and profitable business. The roads in this section are all reaping a rich harvest of toll. We mentioned a few days ago that the Rome and Oswego road had divided six per cent. on the profits of the last six months. We learn that, after paying this dividend, one-third of the tolls have been invested as a sinking fund, thus making the earnings of the road during the half year about nine per cent. on the capital stock. The entire cost of the road was about eighty-five thousand dollars. Since its construction a very large proportion of the travel reaching Oswego by way of the lake has gone over this route. We notice recently in a Milwaukie, Wisconsin, paper, that the receipts for tolls on the Chicago plank road already, amount to one hundred dollars a day, and it is yet completed only about twelve miles.

We have seen it stated that plank roads were first used in Russia—they have been used in Canada for many years, with success; and if we should conclude that their utility has been fairly tested, and that they are equal to their reputation, they are, doubtless, better adapted to the condition and general economy of our State, than any other mode of improvement yet discovered. And, withal, so little skill is required in their construction, that the farmers in a well settled neighborhood might, in a few years, by their own labor, construct all the roads necessary to their convenience, without drawing materially from the labor of their farms. By the use of moveable saw mills, the plank may be cut on the road; and, in timbered districts, could be afforded as cheap in Missouri, as in any part of the Union.

There is another advantage attending the construction of plank roads, arising from the fact, that whatever work may be done at any one time, may be completed and applied to immediate use. This will enable neighborhoods or companies to progress with the work by adding sections from time to time, according to their means, while it ensures to them also, the full benefit of all their labor.

From the foregoing considerations, we conclude that the improvement of our rivers, as far as practicable, constitutes the first important step in our system; and that the construction of plank roads, so as to unite with navigation at convenient points, will perfect a system more beneficial to the State than any other, perhaps, that could be devised in our present condition.

We are aware that the navigation of the Missouri is difficult, and at some seasons impracticable, for all useful purposes. We know,

furthermore, that an opinion is generally entertained, that it is not susceptible of improvement, beyond the removal of logs and snags; but until a survey shall have been made, and the causes of obstruction fully examined and considered by scientific individuals, we are unwilling to adopt the opinion that a stream affording so large a volume of water, and unobstructed by rocks and shoals, cannot be rendered navigable at all seasons of the year, ice excepted.

As the first step towards the establishment of this system, we respectfully suggest that a thorough and skilful survey should be made, of all the rivers within our borders, with the view of testing the practicability of their improvement; and further, that a general law be enacted, authorizing the formation of companies for the construction of works of internal improvement, under such limitations and restrictions as will be calculated to protect the community from the abuse of the privileges conferred.

The importance of enlarging the facilities of transportation is felt and admitted by every intelligent citizen with whom we have conversed; but we have met with no one who seems to have matured, in his own mind, any plan of operation. Much indeed, we may say that every thing—depends upon beginning at the right point; and to do this, we must first ascertain the true nature of the facts connected with the subject. When these shall have been acquired, we can then begin to reason intelligently, and our conclusions will be sound and entitled to respect. It is the duty of the State to cause the proper facts to be ascertained and laid before the people, and this can only be done by the employment of competent engineers to survey our rivers; and we trust that the importance of this measure will be duly considered by our General Assembly now in session. We believe that surveys have been made of some of our rivers, and probably of all; but as we have seen no report by the engineers, we do not know whether these surveys are anything more than mere reconnoisances, or whether they were made with sufficient accuracy to afford estimates that can be relied on as a basis of calculation. It is a trite saying that "time is money," and it may be truly said that for all human purposes, time is power; but it is a power little susceptible of concentration. If the present generation desire to associate their names with the improvement of the State, and to enjoy the benefits to be derived therefrom, they should enter upon the work without delay; for if they postpone the initiatory step until another session of the Legislature, they will then have lost two years, and, consequently, a considerable portion of the power allotted to them for useful purposes.

One of the common errors committed in the prosecution of great public works, arises from a desire to execute too much within a given time: this is simply a miscalculation of power, a mistake that would not be likely to happen were the projectors thoroughly conversant with all the facts touching the subject. But it frequently happens that the work of internal improvement is delayed by a State or community until the necessity of its construction becomes so obvious and urgent that they are finally entered upon suddenly, and without either the information or means necessary to ensure success. Incited by such causes, efforts are made to execute in perhaps two or three years, works that

could not be conveniently and well done in ten—in such cases disappointment and loss necessarily insue; and the project fails entirely, or the deficiency of power must be supplied by anticipating the future, and drawing upon the resources of the next generation.

In presenting our views on the subject of internal improvement in Missouri, we desire to be understood as offering no discouragement to any project that has been contemplated in any part of the State: we should be happy to see each and all carried into successful operation, and shall be pleased to receive and publish communications in regard to the merits of any improvement projected or contemplated in the State, or indeed in any part of the Union. The opinions which we have given are the result of many years observation and reflectian, and if they should excite in the minds of our readers a more lively interest in regard to this important subject, we shall have accomplished all that we hoped for in the beginning.

There is, however, another consideration to which we wish to direct the attention of the reader before concluding this article. It will be recollected that we have endeavored to show that all the principal lines of improvement east of the Mississippi, converge to a point in the central part of this valley. Now it will be obvious to every intelligent and unprejudiced mind that this is the proper point at which a railroad to the Pacific should commence. And here we respectfully invite the attention of our readers to a series of articles on the subject of Eastern Commerce, from the pen of our talented contributor, J. Loughborough, Esq., of Liberty, Missouri. These articles contain an account of Eastern Commerce from its earliest history to the present time, and present, as we believe, the only plausible route for a railway to the Pacific, that has yet been suggested.

The project of a railway to the Pacific is one of such magnitude, that notwithstanding our conviction of its vast importance and ardent desire to see it undertaken, we have refrained from urging it upon the consideration of our readers lest we should be looked upon as visionary castle builders. But since the legislatures of eighteen States have adopted resolutions in favor of Mr. Whitney's scheme, and select committees of both houses of Congress have unanimously reported in its favor, it cannot longer be fairly viewed as a mere chimera of the imagination; but is to be regarded as one of the probable, if not certain enterprises of the age. Hence, there is no one subject connected with the public policy or economy of the Union, which involves so many interesting points for the consideration of the people of this country. The State of Missouri is especially interested in the location of the route as well as in the completion of the work; and her citizens would be unfaithful to themselves should they supinely submit the location and direction of the enterprise to others, without an effort to bring fairly before Congress and the people the advantages of commencing the route on the Mississippi river at some point within our own State. And we trust that our General Assembly will insist on the policy of causing the route to the Pacific to be thoroughly examined, under the direction of the General Government, before the nation commits itself in favor of any particular scheme.

ART. II.—COMMERCE OF THE EAST—NO. II.

MODERN HISTORY OF IT.

BY J. LOUGHBOROUGH, ESQ.

It is a great mistake, to suppose that the illustrious navigators of the latter part of the fifteenth century were a set of ignorant adventurers, destitute of science, and a knowledge of the history of the past, and impelled only by burning ambition, and foolhardy courage. Columbus was well aware of the spherical figure of the earth, before he sailed directly west, [*a*] and Vasco de Gama had pondered well upon the historical tradition preserved by Herodotus, concerning the circumnavigation of Africa by some Phœnician vessels, under the orders of Necho, king of Egypt, and the several voyages along the west coast of Africa, made by order of the kings of Portugal, under the bull of Nicholas V, issued in 1454, assuring to them exclusive rights of navigation and conquest in all newly discovered countries, before he doubled the Cape of Good Hope [*b*]; nevertheless, his having done so in 1499, has deservedly made his name immortal.

The new route thus opened to the east soon cut off the profits of its former masters, and gave the Portuguese the monopoly of the Indian trade. They destroyed the fleets of the Turks and Venitians, which were forthwith launched upon the Red Sea, to re-open the ancient channel of the trade, [*c*] and soon acquired entire control of it.

Francis of Almeida, the first viceroy of the king of Portugal, [from 1505 to 1509,] in the east, succeeded, in spite of the Mohommedans, in forming treaties with the native princes, by which the king of Portugal was acknowledged; and in extending the power and fame of his master. [*d*] Wherever he landed he found trading establishments, and he took possession of Ceylon in 1506. Alphonse of Albuquerque, his successor, [1510 to 1515,] confirmed their power there. He erected fortresses to protect their trading stations, and, by his vigorous policy, induced the princes to seek his alliance. He also took possession of the Moluccas, and thus obtained the spice trade, and closed his career by the conquest of Ormutz, on the Persian Gulf. [*e*] Soon after the Portuguese monopolized all the principal places from the Red Sea eastward to China, and for sixty years they held unrivalled sway, prescribing the terms on which others should trade, and fixing the prices of every thing. [*f*] The seat of the viceroy was at Goa. Originally, knights of chivalry went to the east, but subsequently avarice stimulated the adventurers, and the supremacy of the Portuguese was maintained by revolting schemes of intrigue, and acts of barbarism. [*g*] Weak kings succeeded to the great John II, and the good Emanuel. Under Sebastian, the instrument of the Jesuits, their dominion de-

a Irving and Robertson. *b* Southey. *c* Sismondi and Daru. *d* Lardner's Spain and Portugal. *e* Ibid. *f* Mills' India. *g* Southey.

clined. (*a*) The union of Portugal with Spain, decided their fall in the east, after sixty years of power and splendor, derived from this commerce. The Spanish kings neglected this trade, and robbery, piracy, and villany resigned in the east, until the advent of the Dutch. (*b*)

For some years succeeding the voyage of Vasco de Gama, the Dutch were eagerly engaged in abortive attempts to reach the East Indies through the Arctic Sea. (*c*) At length the harbor of Lisbon, which had been the emporium of the Indian trade, and the seat of opulence and power, was closed by Philip the Second, to the Dutch, as a punishment for the revolt of the United Provinces. (*d*) This excited the anger, the cupidity, and the skill of the latter. Cornelius Houtmann was sent upon an exploring voyage, in 1595, and happily returned, after making treaties with the Javanese. (*e*) A number of trading companies were soon after formed, all of which were united, in 1602, into a great East India Company, with power to make peace and war. (*f*) Then the great struggle with the Portuguese commenced. War, piracy, treachery, and intrigue, became the weapons of both parties. In 1624, Portugal lost the Moluccas; in 1663, Japan; in 1641, Malacca; in 1658, Ceylon; in 1660, Celebes; and in 1663, the Malabar coast. (*g*) During the latter part of the contest, the English entered India for the first time, effectually.

In the year 1600, queen Elizabeth gave the merchants of London an exclusive monopoly of the commerce of the East for fifteen years; and, soon after, the four first merchant ships of the East India Company, sailed to the Moluccas. (*h*)

In a very short period establishments were formed in Java, Amboyna, and Banda. In 1623, they were invited by the Persians to assist in driving the Portuguese from Ormutz. This was accomplished, and Gambroon established at the mouth of the Persian Gulf. (*i*) To this succeeded a variety of military and naval contests with the Portuguese, marked by recklessness of principle, and shocking and atrocious cruelties, until about the middle of the seventeenth century, when the Dutch and English finally crushed all opposition. [*j*] The native princes soon discovered that the Dutch were utterly regardless of their engagements, and that in violation of treaties, they sowed dissensions, prosecuted wars, and indulged themselves in every form of barbarity. Batavia, on the northern coast of Java, became, after 1619, the seat of the Dutch government in the east. [*k*] The Dutch retained most of their Indian possessions until the great European war with Napoleon, when the naval power of Great Britain gave them the preponderance. [*l*]

In the year 1618, an East India Company was formed at Copenhagen, by Christian the Fourth, and Boschower was despatched to the east. [*m*] He died; but his second in command settled Tranquebar, and erected the fortress of Dansberg. The opposition of the Dutch was too powerful, and the company surrendered their rights to the

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a Robertson. *b* Mills' History. *c* Tytler. *d* Watson's Philip II. *e* Russell. *f* Hist. Holland. *g* Robertson. *h* Lingard and Henry. *i* Robertson. *j* Smollett. *k* Mills. *l* Scott. *m* History of Denmark.

crown; and for many years the Danes ceased to voyage to the east. In 1670, [*a*] Christian the Fifth formed a new company, with the powers of peace and war; but the vigorous resistance of the natives and Dutch, drove them to a surrender of their charter in 1729. Two years afterwards, Christian the Sixth revived the company for forty years, and at the end of this period for twenty years, but divesting it of the exclusive trade. [*b*] This company founded settlements at Malabar, on the Coromandel coast, in Bengal, at the Straits of Malacca; and, in 1790, the king purchased its privileges, and opened the trade to all Danes. [*c*]

Colbert, the celebrated minister of France, formed, in 1665, a company with fifteen million of livres capital, to which he gave the monopoly of the French trade in the east for sixty years. (*d*) Madagascar was chosen as their centre of operations. In five years their affairs were so badly managed, as to compel them to a surrender of their charter. During the remainder of the seventeenth century, the French trade to India was of trifling value. In 1714, the charter of the company was renewed; but again its affairs were mismanaged, and its powers surrendered under the administration of Cardinal Fleury. [*e*] He conferred their powers upon Orri and Fubuy, and from this period the French trade began to prosper. Pondicherry rapidly improved; the Isle of France flourished under Bourdonnaye, and a colony upon the Ganges grew under the care of Dupleix. In the naval war of 1745 the French maintained themselves with great valor; and, subsequent to 1748, their influence over the native princes raised their eastern power to its utmost height. [*f*] They obtained the possession of Golconda, Orissa, Coromandel, and other places. The war of 1755, was fatal to French power in the east. After a heroic struggle, they were stripped of every thing, except Pondicherry and a few trifling places. [*g*] Pondicherry, after being lost and won a number of times, was secured to them by the peace of Paris, in 1814, and is, we believe, yet retained. [*h*]

Subsequent to the formation of the first English company, by Elizabeth, a large number of other companies were organized; but the whole of these were finally united in 1702 [*i*] into one great one, which has secured to itself the command of a trade unrivalled for its extent and riches, and the civil and military supremacy successively over the native princes, until at this time, their territories count millions of square miles, and their subjects number hundreds of millions. Vast fleets and armies have been created by this company; immense empires have been subjugated, gorgeous thrones have been prostrated, powerful monarchs have been subjugated, kingdoms and principalities have been bartered like bales of goods; and, with the riches which England has derived through them, she has been enabled to contend single-handed against the combined power of all Europe—to triumph over them—to crush the greatest genius, and mightiest military hero the world has ever seen; and finally to impress her policy upon every

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a Hist. Denmark. *b* Ibid. *c* Mill. *d* Mignett. *e* Guizot. *f* Hist. France, Lardner. *g* Smollett. *h* Scott. *i* Bissett.

portion of the globe, and secure an empire upon which the sun never sets. [*a*]

Before we proceed to a consideration of the modern attempts to reach the Indies westward from Europe, it should be remarked that the Russians, as far back as 1689, had succeeded in forming a treaty with the emperor of China, under the stipulations of which, an overland trade was carried on from Moscow to Canton. [*b*] It was under this treaty, that the first trade by barter with the east was conducted, the Russians taking into China furs, principally, with some other articles, and receiving in exchange teas, silks, &c. The value of this trade, at present, is stated at $19,629,350 per annum. The adventurers engaged in it, sometimes proceed altogether by land, from Moscow through Siberia and Mantchoo Tartary, a distance of more than six thousand miles, through wild and desolate regions, over abrupt and towering mountains, over naked wastes and frozen plains, across icy streams and lakes, enduring the utmost extremity of privation and fatigue, and exposed to the dangers to be apprehended from ferocious beasts of prey, and savages, treacherous, barbarous, and vindictive. [*c*] The trade of the southern provinces of the empire is carried on by descending, in boats, the river Wolga, sailing across the Caspian, and thence up the river Oxus, and overland by the ancient route from Constantinople to the western provinces of China. This route is much longer, but is relieved by the water carriage. [*d*]

From the period when Columbus discovered the new continent, by attempting to sail westward to India, the grand object was never lost sight of by the several European powers, which fitted out expeditions for discovery, conquest, and colonization. The Spaniards steadily kept this purpose in view, in all their voyages, from the time of Columbus to the expedition of De Soto. This last was the concluding attempt made by them, for the discovery of a navigable passage through the continents. [*e*] In all their hazardous adventures, they made but one discovery which seemed to promise a new and profitable route to India. This was the passage of Cape Horn by Magellan, and the voyage across the Pacific in 1520. [*f*] To this day, vessels occasionally sail by this route to the east; but it is only when it is made their interest to do so, by touching at intervening ports. With this exception, the passage by the Cape of Good Hope has, ever since its discovery, been the safest, cheapest, and most profitable route to India.

The first voyage of the Portuguese, for the discovery of a western passage to India, was that of Gaspar de Cortereal, in the year 1500. He proceeded six hundred miles along the coast of Labrador, and returned. [*g*] In 1501, he made a second voyage, and was never again heard of. His brother attempted a voyage in search of him, but met with a like fate.

The French voyages for the furtherance of this great design, were those of Giovanni Verrazano, a Florentine navigator, fitted out by Francis the First, who struck the coast of South Carolina, and followed

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a Macauley. *b* Muller and Cox. *c* Krascheninikoff. *d* Clarke. *e* Ramusio. *f* Robertson. *g* Tytler.

it northward to the fiftieth degree of latitude; [*a*] of Cartier, who made three voyages, and ascended the St. Lawrence, in 1535, as high as Montreal; [*b*] and of Champlain, a fur merchant, who planted a colony at Montreal, and ascended to Lake Superior. [*c*] Their attempts by land, to find such a passage, were those of Marquette, in 1673, who descended the Mississippi to the mouth of the Arkansas; (*d*) of LaSalle, whose last words, "*La Chine*," spoken to his friends on his departure, were adopted as the name of the locality, which it ever since retains; and who described the Mississippi to its mouth, and was subsequently murdered by his companions, in the plains of the Arkansas; (*e*) of Hennepin, who ascended the Mississippi to the Falls of St. Anthony; (*f*) and a voyage undertaken under the auspices of the Baron de Carondelet, Governor General of Louisiana, in 1797, the parties in which ascended the Missouri some distance. (*g*)

The English attempts to discover this passage by sea, commenced with the voyage of John Cabot, in 1495. (*h*) Since that period, the following voyages have been made, under the authority of the British Government, to facilitate this discovery, viz: that of Robert Thom, in 1527; that of Mr. Hore, in 1536; that of Martin Frobisher, in 1576; of the same in 1577; and of the same in 1578; that of John Davis, in 1585; that of the same in 1586; and of the same in 1587; that of George Weymouth, in 1602; John Knight, in 1606; of Henry Hudson, in 1610; that of Sir Thomas Button, in 1612; that of Capt. Gibbons in 1614; that of Bytot in 1615; that of Bytot and Baffin in 1616; that of Munk (a Dane,) in 1619; that of Fox and James in 1631; that of Middleton in 1741; that of Moore and Smith in 1746; that of Pickersgill in 1776; that of Young in 1777; that of Captain John Ross in 1818; that of Lieut. Parry in 1819; of the same in 1821; and of the same in 1824; and that of Capt. Ross in 1829; and finally the recent voyage of Capt. Parry. (*i*)

The first English attempt to discover a passage to the Pacific through interior lakes and streams, was that of Jonathan Carver, (a Captain in the British service,) who adventured on his private account to win the honor of this grand discovery. In the year 1766 he left Boston, and by way of Albany and Michillimackinac, proceeded as far west as the river St. Francis, and from thence returned, after an absence of two years and seven months. It is in his narrative that the name of Oregon river first appears in *English* history. The French missionaries had heard of it near a century before. Carver died in the conviction that a communication would be found in the direction which he indicated. Richard Whitworth, a member of Parliament, formed a design of pursuing the discoveries of Carver, but the outbreak of the American revolution prevented it. (*j*)

The Hudson's Bay Company was incorporated by Charles the Second, with the express condition that the corporation should aid and assist in the discovery of the north-west passage. (*k*) It was under the auspices of this company, that the voyages of Knight, of Middleton, and of Moore and Smith, were undertaken. (*l*) But the public opinion

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a Tytler. *b* Schoolcraft. *c* Bancroft. *d* Marquette Journal. *e* Joliet. *f* Hennepin's Travels. *g* Hist. Louisiana. *h* Tytler. *i* Tytler, Bancroft, and others. *j* Carver's Journal. *k* See Charter. *l* Greenhow.

did not permit them to pause with these efforts. It compelled them to fit out Hearne in three several journeys towards the Arctic Sea, ostensibly, at least, for this discovery. His first journey was from Prince of Wales fort, on Hudson's Bay, in November, 1769, only two hundred miles northward; his second was from the same point, to the vicinity of White Swan Lake, in 64 deg. north latitude; and his third was from the same point to the mouth of the Coppermine river, far into the Arctic Circle, being near 70 deg. north latitude. In these journeys, Hearne suffered incredible hardships and privations, from exposure to intense cold, toil, and difficulty in traversing jagged ridges and frozen streams, and for days together entire destitution of food. (*a*)

The next attempt of the English to connect the two oceans by lakes and streams, was that of Sir Alexander Mackenzie. On the 3d June, 1789, he set out from the head of Athabasca Lake, passed into Slave Lake, and thence down the Mackenzie river to its mouth, in latitude 69 deg., and longitude 135 deg. Again in October, 1792, leaving the same fort, he ascended the Unjegah or Peace river, to the Rocky Mountains, which he crossed in latitude 54 deg., embarked on Frazer's river, and, after descending some distance, left it, and proceeded westward on foot to Salmon river, which he descended in canoes to its mouth, near King's Island, in latitude 52 deg. The discoveries consequent upon this expedition, have enabled the British fur traders to make use of the interior streams for their trade. Mackenzie was then in the employ of the north-west company, a rival of that of Hudson's Bay; but his Government, nevertheless, knighted him for this service. (*b*)

This may be taken as the last adventure of the English to find a passage for commercial purposes. The solution of the geographical question of the junction of the waters of the Atlantic and Pacific, along the northern coast of America, has continued to be an object of prime scientific interest; and the several journies of Franklin and others, were fitted out for this interesting object.

It is well known that the expedition of Lewis and Clarke, in 1804–5–6, was set on foot by Mr. Jefferson, with this view; (*c*) and that since that time, a number of fur traders, and others, have given us some accounts of the course and character of western streams. (*d*)

Having examined the various attempts to discover a natural navigable passage through the continent, let us now turn our attention to the suggestions made at several times, and by a number of persons, respecting the practicability of uniting the eastern and western oceans by a canal or railway.

It is not generally known, and as matter of curiosity the fact should be recalled, that long before the discovery of America the two oceans were actually united by a canal. This canal connected the river Atrato, which falls into the Gulf of Darien to the southeast of the Isthmus of Panama, with the Rio San Juan, a small stream, flowing into the Pacific Ocean. This canal was carried through the only known entire

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a Hearne's Journal. *b* Mackenzie's Travels. *c* Jefferson's Letter to L. &c.
d Pilcher, Bonneville, Hunt, Ashley, Sublette, &c.

interruption of the chain of the Andes, and was navigated in canoes by the natives. (*a*)

In 1521, Cortez, whose mind was alive to every circumstance calculated to reflect glory upon his name, caused a survey to be made of the Isthmus of Tehuantepec, with the design of uniting the two oceans. Subsequently this became the route for the Manilla merchants, to cross over from Acapulco to the Mexican Gulf. (*b*)

The first modern project for uniting the two oceans by a canal, was the one of M. Martin de la Bastide, who proposed to unite the river St. John, which flows into the waters of the Mexican Gulf, to Lake Nicaragua, by a canal, and the Lake with the Pacific; but M. Bastide forgot to ascertain, (which is true,) that the Lake is too much elevated to connect it with the ocean, without many locks, and that the St John is interrupted by many falls.

In the latter part of the seventeenth century, a company was organized in Scotland to open a communication across the Isthmus of Darien; but the influence of the East India Company, which dreaded the loss of its monopoly, prevented the government from acceding to the proposition. (*c*) Some time afterwards, its enterprising projector, William Patterson, revived the scheme. With a capital of £700,000, five ships, and 1200 men, he landed upon the Isthmus and attempted to found a colony; but being denounced and abandoned by his own government, this colony was attacked simultaneously by disease, famine, and a large Spanish force, and finally compelled to abandon the enterprise in despair.

From that period to the present, the project of dividing the Isthmus has frequently occupied the attention of politicians and commercial men; but until within a few years, no actual efforts have been made to accomplish the design. Towards the end of the last century, an accident gave to the Isthmus of Tehuantepec fresh importance. Some brass pieces, with the stamp of Manilla upon them, were found by the Viceroy Bocareli. (*d*) The archives of the imperial city of Tehuantepec revealed the fact that those pieces had been transported from the Pacific to the Gulf, partly by land and partly by water, the route being from the Pacific up the Chickapa, across the rual-passo; thence, by land, over the great Cordilleras, to the head waters of the Coatzacoalcas, which empties into the Gulf.

The sudden interest thus excited, did not die away until the year 1814, when the Spanish Cortez actually ordered the canal to be made. Under this order a reconnoissance was made by Gen. Obregoso, and then the matter was dropped by the Spanish government. (*e*)

This enterprise found its next advocate in the immortal Bolivar, who, in the year 1827, appointed a commission to ascertain upon actual survey, the best line of communication, either by canal or railroad. (*f*) The commissioner, after surveying the route, made a report in favor of a canal, accompanied by an estimate of a French engineer, who calculated that a canal, forty miles in length, would unite the two oceans, at a cost of three millions of dollars. The early death

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a Malte Brun. *b* Prescott. *c* Wilkes. *d* Lt. Maury. *e* Wilkes. *f* Hist. S. America and Mem. of Bolivar.

of the illustrious patron of the enterprise, put an end to the further prosecution of it.

In the year 1841, Gen. Santa Anna, the then President of Mexico, empowered Don Jose Garay to have a survey made for a canal across the Isthmus of Tehuantepec. This survey was made during the years 1842 and 1843, by Cayetano Moro. (*a*) In the WESTERN JOURNAL for May, 1848, this survey is examined by Lieut. Maury, who had a copy of it in his possession, and its folly and impracticability are amply demonstrated. The reader of this article will please turn to it.

Under the especial patronage of M. Guizot, the late Prime Minister of France, a private survey of the Isthmus was made by French Engineers. The details of this report, we believe, have not as yet been made public. Taken in connection with some other circumstances, we have conjectured that the French statesman had the double design of obtaining the control of a new route into the Pacific, and of planting a French colony in California. Recent events in Europe and America, have concurred to frustrate this design. (*b*)

The last step of importance taken upon this subject, was that of our own Executive, in instructing our Commissioner, in treating with Mexico, to endeavor to obtain an exclusive right of way across the Isthmus of Tehuantepec, with the purpose of constructing a canal or railway by the Government, should its constitutional powers admit of it; and, if not, of conferring the privilege, with ample protection, upon individual citizens. For many reasons, we are thankful that this scheme has failed of execution. (*c*)

Will it be believed that, after so many efforts and so much expense towards the cutting a canal across the Isthmus—efforts planned and encouraged, too, by great statesmen and learned philosophers—for the purpose of shortening and cheapening the European route to the East Indies, the facts so turn out, that if such a canal were now made, free of cost, and large enough to float heavy vessels, the route would still be inferior, in every respect, to the one at present in use? Yet such is undoubtedly the truth. Statesmen, and other schemers, have calculated as if the earth were a cylinder, and not a sphere—as if a degree of longitude were as broad in the Arctic Circle, as upon the equator. Let any one take a good globe, and make the proper measurements upon it, and he will find that

From London to Panama, 81 deg. of longitude and 42 deg. of latitude must be overcome, which, in a direct line, would vary little from - -	5,868 miles.
From Panama to Canton is 170 deg. of longitude, of 60 miles to the degree, and is in a direct line - - - - - - - -	10,200 "
Making from London to Canton, via. any canal for the various places proposed, -	16,068 "

From Canton to England, via. the Cape of Good Hope, in the season of the north-east monsoon, is—

From Canton, through the China Sea, to the Equator, is 1,320 miles.

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a Com. Perry. *b* Courier d'Etats Unis. *c* Executive Documents.

From the Equator to Sunda Straits, in 12 deg. of south latitude,	750 miles.
Through the region of the southeast trades, to 27 deg. south latitude, and 50 deg. east longitude,	3,200 "
Thence to the Cape,	1,560 "
From the Cape to London,	6,900 "
Total,	13,730

Making the route through the canal 2,338 miles farther than the present one. Again:

From Canton to England via. the Cape of Good Hope, in the season of the southwest monsoon, is—

From Canton to the Straits of Formosa,	480 miles.
Thence to Pill's Straits, passing near the Pelew Islands,	1,300 "
Thence to Alla Straits,	1,200 "
Thence to 27 deg. south latitude, and 50 deg. east longitude,	3,900 "
Thence to the Cape,	1,560 "
Thence to London,	6,900 "
	15,340

Making the distance through the canal, at the most unfavorable season for navigation, around the Cape, 728 miles farther than the present traveled route.

Again: From England to Singapore, during the season of the northeast monsoon, by way of the Cape of Good Hope, is 2,318 miles nearer than by way of the Panama canal, at the same season; whilst from London to Valparaiso, on the west coast of South America, by way of the canal, would be only 422 miles nearer than the present route, which advantage is over balanced by the increased difficulties of navigation.

It must be remembered that all these distances are calculated on a straight line from point to point; but vessels would be as much impeded by winds and currents on one route as the other. These facts, taken in connection with the considerations, that it is extremely doubtful whether a canal can be cut at all; (*a*) almost certain that one of sufficient size to dispense with trans-shipments could not be made; (*b*) perfectly certain that if made, the outlets of it, east and west, cannot be secured from bars, &c.; (*c*) and undoubtedly true that for a greater part of the year one day of exposure to the malaria of the Isthmus is fatal to human life; (*d*) render it both unwise and impolitic to expend time and means upon such a project. If the commercial route to China cannot be shortened, what adequate motive can there be for such undertaking? It may be said that such a canal would enlarge our commerce on the west coast of America, and at the same time enable us to communicate more readily with our possessions on the Pacific, and thereby facilitate our municipal regulations, and draw more closely the bonds of our extended territorial empire. These considerations are, in some measure, true, but the improved advantages would

a Malte Brun. *b* Ibid. *c* Maury. *d* Maury.

certainly not repay us for the expense of cutting a canal and constructing a railroad across the Isthmus, especially when it is considered that a heavy expense would be annually incurred in protecting it, and that its existence would almost certainly involve us in difficulties and wars. But the *decisive* answer to all such projects is, that it is *impossible* to make either a canal or railroad, which shall be of much commercial value; and therefore, it is a waste of time and ink to indulge in such speculations.

In our next number we will endeavor to estimate the capacities of the Missouri and Columbia rivers for commercial purposes, to ascertain whether their navigation is susceptible of profitable improvement —to ascertain whether a railroad can be constructed from our western border to the Pacific—whether the construction of such a road would be preferable to the adoption of the rivers as the commercial route, and finally, what should be the eastern and western terminus of such a road, and the intermediate route over which it should pass.

NO. III.

NAVIGATION OF THE MISSOURI AND COLUMBIA RIVERS.

The next scheme in order of time to that of dividing the Isthmus, for opening a new route to the trade of the East, is the one which proposes to ascend and descend the Columbia and Missouri rivers, to and fro, and thus shorten the route. This idea originated, we believe, with the Baron de Carondelet, who, in 1796, despatched Don Jaques Clamorgan, with the approbation of Charles IV, King of Spain, to the sources of the Missouri, and thence to the Pacific. Clamorgan, who was a citizen of St. Louis, prosecuted the enterprise some distance up the Missouri river, but without accomplishing the views of his employer. (*a*) A little previous to the acquisition of Louisiana, the attention of Mr. Jefferson was attracted to the subject, but the views of this eminent statesman were limited, we believe, to geographical discoveries, to acquisitions in geology, zoology, and botany—the situation and characteristics of the Indian tribes, and the means of conducting an interior commerce. (*b*)

From the period of the return of those brave, faithful, intelligent, and enterprising travelers, Lewis and Clark, who were despatched west by Mr. Jefferson, many persons began to speculate upon the commercial value of our western streams, and upon the possibility of diverting

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a Col. Benton. *b* Jefferson's Letter to Lewis and Clark.

at least the commerce of Western America, if not some portion of that of the East Indies, into this new route. At length, in the year 1818, Col. T. H. Benton, the present distinguished senator from this State, published in a St. Louis paper, a number of able articles, touching the importance and value of Oregon, and the commerce of the Pacific. In one of these articles it is formally proposed to American merchants, to abandon sea voyages to the East, and adopt the line of communication discovered by Lewis and Clark. The change is urged by Col. Benton upon the grounds that the new route is preferable "in shortness of distance, in safety, in cheapness of transportation; and in substituting a change of commodities for a trade in gold and silver."

The route as proposed, consists of four parts: 1. A river navigation up the Missouri; 2. A land carriage across the Rocky Mountains; 3. A river navigation down the Columbia; 4, A sea voyage across the Pacific.

In order to estimate the practicability and value of this route, we shall briefly examine each of these four parts, and lastly endeavor to ascertain whether, if practicable, in the full extent of the projector's views, a commerce with the East through this channel would be safer, cheaper, and in other respects preferable to the one carried on by way of the Cape.

1. *The Missouri River.*—This river should be considered in two aspects—in seasons of high, and of low water. The spring and summer freshets usually occur about the latter part of March, and continue until the middle of July. This is on the lower portion of the stream; the period of its continuance decreases as the river is ascended, until at the mouth of the Yellowstone, the freshet rarely lasts over two months. During this spring flood, steamboats of light draught have ascended some distance above the Yellowstone; but they are in some danger of being caught there, and compelled to remain through the winter. It must be recollected that, except during the freshet, steamboats even of small size, ascend above the Council Bluffs with great difficulty, and rarely attempt it. It is also during the freshet that the fur traders uniformly descend with their batteaux to St. Louis. *They never attempt to do so at any other period.* [*a*]

In periods of low water, keel boats and other light craft may be propelled up the river at the rate of about twenty miles per day, with the cordelle and pole; and some instances have occurred of very light steamboats ascending, with immense difficulty, as high as Cheyenne river; [*b*] but in low water neither keel boats or batteaux can be brought down the stream. The reason of the difference is, that in ascending, if bars are struck, the boat is easily backed off; but in descending it is very difficult, and sometimes impossible, to recover the channel after the boat has landed on a bar. The author of this article descended the river in the fall of 1843, from near the mouth of the Yellowstone to Council Bluffs, in a twelve foot canoe, with a single companion, and no other burthen than provisions and bedding. Scarce a day passed, of the thirty-eight weary ones spent in this journey, without his being compelled to get out and drag the canoe off of bars.

a Derived from the traders. *b* Ibid.

Major Long says: [a] "In October, 1819, I descended in a canoe from near Council Bluffs to the mouth of the Missouri; and the depths in the channels across the bars, not exceeding thirty inches;" and he adds that it cannot be improved.

Capt. Siré, [b] whose statement is corroborated by P. Chouteau, Esq., states: "I navigated boats on the Missouri river for twenty-five years. From St. Louis to Council Bluffs, there is high water for three months in the year, during which a steamboat of 250 tons might be taken up in nine or ten days, a distance of 700 miles. For this three months, there is an average of six feet of water. During this period the cost of transportation is one dollar per hundred. From St. Louis to Council Bluffs, the river is closed with ice for four months of the year, and the ice becomes five feet thick.* For the remaining five months of the year, the water is low, varying from thirty inches to four feet; for three months a steamer might take up seventy-five tons, but for the two months lowest stage, not over forty tons, and then occasionally discharge. During the five months of low water it requires fifteen days from St. Louis to Council Bluffs, and the cost $2 50 per hundred. The navigation down the river from Council Bluffs, though more rapid, is more dangerous and destructive. A good boat will not last longer than three years. This river is such that it cannot be depended on, nor can it be made a slack-water navigation—dams could not be erected to stand; the current is rapid, and bed and bottom all quick sand. For 250 miles above Council Bluffs, to near the Big Sioux, the river is narrower and better than for some distance below; thence to the Yellowstone the navigation becomes extremely difficult, on account of the width of the river. "Even in high water" the depth up there "is only 4½ feet." The freshet commences up there the latter part of May. "During the high water he has taken to Fort Pierre 150 tons, and to the Yellowstone 50 tons. During high water the current is very rapid, and would require to the Yellowstone forty-five or fifty days, and at a cost of transportation of eight dollars per hundred. At low water the river cannot be navigated. Between high and low water the passage may be made in thirty-five or forty days, because the current is not so rapid, with fifty tons, at six dollars per hundred."

Such is the testimony of one of the most competent judges, and the writer will add, that the facts are verified to him by a large number of mountain traders, of experience and intelligence. It should be added, that from the Sioux down, the river swarms with snags, and that its bars are in a course of perpetual change—thus rendering the navigation difficult and uncertain. So much for the first portion of the new route to India.

2. *Land carriage across the Rocky Mountains*,—The writer of this article has found himself in some difficulty in attempting to reconcile the views of Col. Benton, announced in 1818, (his original plan,) with those contained in his celebrated speech on the Oregon Treaty, and in a letter addressed by him to the Hon. Robert Smith, Chairman of the Committee of the House upon the Oregon Railway. In the essay of 1818, this language occurs: "It was the fate of Lewis and Clark to

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a Letter to Whitney. *b* Statement for Whitney. *Query—Ed.

fall upon difficult parts of this mountain, where its lofty summit was *covered with snow twelve feet deep in the month of June.* At the same time, at the distance of one day's journey further south, an easy and practicable pass presented itself, at which these formidable mountains dwindled down to an ordinary ridge. This gap is known by the name of the *Southern Pass*, and has been repeatedly traveled since the time of Lewis and Clark. Many citizens are now in this territory and some in this town, who have crossed at the pass, and who aver it to be free from difficulty, and easily traveled with loaded wagons." This evidently alludes to the *South Pass* through which Fremont went and which he describes; for it is not the fact that "many citizens have crossed at the pass" at the head of Medicine-bow river, a branch of the Missouri—the fact being, that the account of Lewis and Clark is the only account we have of this pass.

But, be this as it may, how are we to reconcile the above paragraph with the following, from the letter of the same author, to Mr. Robert Smith: "There are two main routes for traveling between the valley of the Mississippi and the Columbia; one through the *South Pass*, on the line of the great Platte, and Lewis' Fork of the Columbia; the other through the *North Pass*, on the line of the Missouri, and Clark's Fork of the Columbia. The pass through the Rocky Mountains, on this (North Pass,) route, is perfectly good, and the way good all the distance from the forks of Clark's river to the great falls of the Missouri. It is an old Indian and buffalo road, which *Lewis and Clark traveled on their return;* and the country along it is rich in grass, and not destitute of fertile land."

The truth seems to be that, when writing in 1818, Col. Benton had in his mind some route near the one over which Lewis and Clark passed *on their outward trip*, and which he supposed to be by the way of the South Pass; and overlooked the fact that, *on their return*, they traveled over the very ground which he had in his mind, and which he has, in 1846, adopted as a portion of the connecting line of land travel between the waters of the Atlantic and Pacific.

In traveling to the Pacific, Lewis and Clark ascended the Jefferson Fork of the Missouri, to its source; and thence in a general direction westward, across Clark's river to the Kooskoosie, a tributary of Lewis' Fork of the Columbia, down which they descended, in canoes, to its mouth, and thence onward. On their return, they followed nearly their former route as far as Clark's river, from whence Capt. Lewis moved north and east to Medicine-bow river, through the *North Pass;* and Capt. Clark ascended Clark's river some distance, and passed over to the sources of the Yellowstone. (*a*)

They seem not to have supposed Clark's river fit for navigation; for, in their journal, they have indicated a route from the great falls of the Missouri to the Kooskoosie, as, in their opinion, the *only* land route for connecting the eastern and western waters. Of this route, the portion through the North Pass, 167 miles to Clark's river, is very good; and of the remaining portion, 33 miles is tolerable, and 140 miles is "over rugged mountains, 60 miles of which we found

a Lewis and Clark's Journal.

covered with snow from two to eight feet deep, on the last of June." Whole distance from the great falls of the Missouri to the Kooskoosie, 340 miles. (*a*)

The only other account of this region which we have is that of Maj. Pilcher, an old fur trader, who was in that country about the year 1824. He states that the distance from the great falls to Clark's river is only 150 miles, (in which he is probably mistaken); that Clark's river is navigable for batteaux the greater part of its course; and that near its mouth rapids occur, which are *impassable.* Therefore, the fur traders make a portage of 60 miles across one of its bends, to Fort Colville, on the Columbia, just above the Kettle falls. (*b*) This last 60 miles is rugged, mountainous, and difficult. (*c*) It is a singular fact that these falls of Clark's river are not mentioned by Father De Smedt, who gives us many details respecting the vicinity. The necessary land travel then, according to Pilcher, is 210 miles at the least, 60 of which is over stupendous mountains. In Col. Benton's speech on the Oregon treaty, this suggestion of Pilcher's is adopted. Such is the *land carriage across the Rocky Mountains.*

3. *A river navigation down the Columbia.*—Three great branches, fed by many tributaries, unite to form the Columbia. (*d*) The northern branch, which is usually designated as the Columbia proper, takes its rise in the north-east corner of the territory; and, flowing southward several hundred miles, over many rapids and falls, and through tremendous mountain ranges, receives the river Clark, which has its origin in a direction nearly due east from Astoria, and in the vicinity of the sources of the Missouri, and descending 700 or 800 miles, making a detour northward unites with the northern branch, near Fort Colville, where their united currents, after descending about 200 miles receive the waters of the Lewis Fork, which heads to the south of the Clark, and near the sources of the great Platte.

All these streams take their rise at immense elevations, and descend over a succession of dangerous rapids and falls. To give some idea of the character of these streams in low water, let us cite some facts: In 1817, Mr. Ross Cox, a clerk of the north-west company, ascended the Columbia from Fort George to the source of the north branch, with a party of voyageurs. After passing the cascades, or rapids, with two portages, they arrived at the great *Dalles*—making portage they arrived at the little *Dalles*—portage, and thence to the great falls—portage, and next day by several rapids with portages—thence to the great rapids—thence passing Lewis' fork to the Priest's rapids—portage, and thence to Pasquin's rapid with portage—thence to Rocky Island rapid—thence to *La rapide de Ignace*, where the river is narrowed between rocks, and, consequently, from this upward, very swift—next day Grand rapid—thence to the Kettle falls and bad portage—thence to the first Dalles, with a portage of one mile—thence through two lakes to the second Dalles, with bad portage—thence to upper Dalles, and bad portage—thence to Rocky Mountain portage, the extreme point for canoes. (*e*)

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a Lewis and Clark's Journal. *b* Pilcher's Memoir, Senate Doc. No. 39, Sept. 1830-31. *c* DeSmedt. *d* Fremont, Greenhow, DeSmedt, &c. *e* Cox's Narrative.

Now take Lewis and Clark down the Kooskoosie, a branch of Lewis river, and thence on the Columbia: From September 25th to October 10th, they note 44 rapids and a number of shoals to the mouth of the Kooskoosie, a distance of only 60 miles—in the next 30 miles, 9 rapids. From 12th to 15th October, upwards of 8 rapids—thence to the mouth of Lewis river, 1 rapid of 3 miles length, 1 bad fall, and 4 rapids—in the next 36 miles, 3 rapids—next 42 miles, 2 rapids—then a number of dangerous rocks and several rapids—then the great falls, 37½ feet—then the rapid below the fall, or Dalles—then the cascade, with three miles portage—and thence to the Pacific. By Col. Fremont, all the rapids below the Dalles are included in the term "the cascades." Lewis river is probably not more rapid of descent; but it is so impeded and blocked up with rocks, that even the fur traders never ventured to navigate it in light canoes. (*a*)

When it is considered that, at a number of these rapids and falls, portages not only of cargoes, but of the boats, must be made, as at the first *Dalles* above the Kettle falls, where the boats of the fur traders are carried one mile over rugged cliffs; (*b*) we think no other evidence need be adduced to prove that, for any other craft than light canoes, or for any other trade than that of furs, these streams are wholly useless. To think of a commerce with India through such a channel, in low water, is, to say the least of it, altogether utopian.

But we are told, 1st. (*c*) That there is no ice on the waters of the Columbia, which will obstruct navigation seriously. 2d. That there is a rise of sixty feet, "and that annual and punctual." 3d. That "no sunken trees encumber its bottom." 4th. That, "at the head of tide water, (180 miles,) are the first rapids, and to this point the river is navigable for merchant ships *of any size*, all the year round." 5th. That "this rapid is occasioned by a shoal, two miles in length, where the fur traders make a portage of that distance, and re-enter the river above, which is deep and gentle to the foot of the Great Falls, distant about sixty miles;" these falls are only 37 feet 8 inches high, and are easily passed by a portage of 1,200 yards." 6th. The navigation is then good for boats of a large size to the confluence of Clark's river, between three and four hundred miles." 7th. That, from Fort Colville, a portage of 60 miles is made to Clarke's river, to avoid impassable falls in the river. 8th. Then Clark's river is ascended 300 miles, to the *North Pass;* and 9th. The ascent of the Columbia and Clark's river, by this route, is not more than 1,000 miles, of which near 200 is tide water, about 300 miles is fitted for boats of one hundred tons, and the remainder for boats of twenty or thirty tons.

Now, to all these facts and arguments, the answer is easy, plain, and perfectly conclusive: 1st. So far as respects the existence of ice, as an impediment to navigation, let us hear Mr. Ross Cox, who spent several years upon the Columbia, travelled up and down it a number of times, engaged in the fur trade; and certainly, by his daily intercourse with the traders and voyageurs, must have been better enabled to judge, than Lewis and Clark, who spent only one season in the

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a Fremont and others. *b* Cox. *c* Benton's essay of 1818, and speech on Oregon treaty, 1846.

country, that season near the mouth, where there is no ice, and who never saw any one who had navigated the river at all. Cox's party left Fort George on the 19th November. He says: "After passing the second falls the cold became more severe, and occasional pieces of ice drifting down the current." Again: "As far as the entrance of Lewis river, the navigation was tolerably free; but from thence the masses of floating ice became so large and numerous, that our frail little barques were in momentary danger of being stove to pieces, and it required all the skill and labor of our men to avoid them. For three days our advance was slow through this dangerous navigation; but, early on the fourth, a scene presented itself, which seemed likely to put a final stop to our progress. Some large masses of ice got entangled among the numerous rocks of a long and crooked rapid; these were quickly followed by others, until the whole presented a line about a quarter of a mile in length, of high, sharp, and fantastically shaped glaciers." Some day or two after, "we had ascertained that the river was frozen a considerable distance; and, during a walk of three miles, it was one firm, thick body of ice." And here the party were ice-bound until the middle of February following, "when the loud crackling of the ice, gave notice of its continual disruption," and in some days the ascent was resumed. So that, instead of no ice in the Columbia, we find it absolutely icebound for three months of the year.

2d. There is a rise of thirty to sixty feet annually; (*a*) but, as these streams rise at nearly the same elevation with the Missouri, and only traverse less than one-half the distance, this freshet must, of course, be of much briefer duration; and three months is the maximum on the lower portion of the Missouri, and two months on the upper. With a rise of sixty feet, even, on the Missouri, would it be *possible* to ascend it?

3d. As respects this assertion about snags, &c., let us hear Ross Cox, of the lower Columbia. He says: "The navigation is often obstructed by sand banks, which are scattered over different parts of the river, below the rapids." Again, "Great caution is required to avoid sunken trees, called snags or planters, and by the Canadians, chicots. Again, above the great falls, "the river, for some distance, is deep and rapid. The canoes were dragged up several miles, and some of them damaged by rocks." Again, on lower Columbia, "some of the canoes having struck on sunken trees, we were obliged to put ashore for a couple of hours, to repair the damage and dry the goods." Again, "several canoes struck on sunken rocks and trees, which compelled us to put ashore to repair the damage." This was in *ascending* the river in one trip.

4th. It is incorrect to say that the river is navigable for merchant ships, of any size, the year round, 180 miles, to the first rapids. Ross Cox, in 1818, says not. The Edinburgh Review, [1846,] the facts of which are derived from the Bay Company, states that ships of only fourteen feet depth of keel, ascend to Fort Vancouver. There is no

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a Lewis and Clark and others.

authority, whatever, for asserting it to be navigable for the largest ships. Moreover, in spite of all which has been said and written, respecting the entrance of the mouth of the river, we must believe the most recent evidence adduced by Lieut Maury: [*a*] "That Lieut. Howison was wrecked at the mouth of that river, two years ago, in the U. S. schooner Shark. She went to pieces at a place on the bar, where, but a few years ago, the Exploring Expedition found water enough to float a seventy-four; that he then chartered a small vessel, and was detained sixty-three days in the mouth of the river, by the bar, although the vessel drew but eight feet water; and that the character of that harbor has entirely changed since Capt. Wilkes surveyed it." This amply proves that the shifting and changing of the bars, (for which there can be no remedy,) renders this harbor altogether unreliable.

5th. At the first rapid, or "the cascades," a portage of three miles must be made, and then the navigation is tolerable 60 miles, to the *Dalles*. As to the assertion that the falls "are only 37 feet 8 inches, and easily passed by a portage of 1,200 yards," we will premise that, in high water, the falls are buried by the back water from the Dalles, or narrows, which are impassable; and that, in low water, the whole distance from the head of the falls to the foot of the Dalles, is ten miles, the whole distance impassable for canoes, at any time. Cox says: "The Columbia, at the narrows, for upwards of three miles, is compressed into a narrow channel, not exceeding sixty or seventy yards wide; and, through this narrow channel, for upwards of half a mile, the immense waters of the Columbia are *one mass* of foam, and force their headlong course with a frightful impetuosity, which cannot, at any time, be contemplated without producing painful giddiness. We were obliged to carry all our lading from the lower to the upper narrows, nine miles. Again at the head of Great falls. The descent of the river from above this fall to the end of the lower narrows, *exceeds seventy feet;* and, throughout the whole distance, [ten miles,] the river is strewed with immense masses of hard, black rock, mostly honey-combed."

6th. It is not correct to say that the navigation is good from the Great Falls to the mouth of Clark's river. A number of rapids intervene, and also the Kettle falls, [16 feet.] [*b*]

7th. The land carriage, across the bend of Clark's river, has already been noticed.

8th. Probably correct; and finally,

9th. The distance from the north pass to the Pacific, descending Clark's river, is not known, but is probably near 1,000 miles. Whether vessels of 100 tons burthen would float between the Great falls and the Kettle falls, cannot possibly be known, as no sufficient examination of the river has been made; and the same is the fact as respects Clark's river. It is well known that the fur traders *never ascend the rivers in high water*, because the current is too strong, and *never descend in low water*, because the rapids are too dangerous; and

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a Western Journal, May No. *b* Pilcher and DeSmedt.

that they never use any craft but light batteaux. [*a*] The facts collected in this essay, sufficiently evidence that boats of one ton burthen could not ascend in low water, because such boats cannot be transported around portages. In high water what are the difficulties?

If we only knew positively the altitude of the mouth of Clark's river, and at one or two points above on the same stream, the possibility of navigating these streams by steam could be demonstrated beyond cavil. Lewis and Clark had no barometer, and Fremont's was broken some days previous to his arrival at Walla-Walla.

It is a well known fact, that steamboats on our western waters, have engines adapted to overcome a certain descent of water; that to overcome a greater descent, a greater weight, as well as power, of engine is requisite; that this increase of steam power diminishes the capacity of the boat for burthen; and that there is a rate of descent which *no engine* can be made to overcome. The writer is informed by competent engineers, that our western boats are usually adapted to ascend a stream with a cargo, which descends at the rate of twelve to fifteen inches per mile; and that *without a cargo*, very few of them could ascend a stream descending at the rate of two feet to the mile. The descent of the Missouri from the Council Bluffs, is within a minute fraction of one foot per mile, (*b*) but such is the pressure of the upper portion of its waters during the freshet, that in narrow places, on the lower portion, the best boats cannot ascend without the use of cables. Now, the waters of the Columbia have their sources at the same elevation with those of the Missouri; and according to the advocates of steam navigation upon them, the distance from the North Pass down Clark's river to the Pacific, is only one thousand miles, whilst the distance from the great falls of the Missouri, a point lower than the proposed head of navigation on the Clark—to its mouth, is two thousand five hundred and eighty miles; and consequently, the descent of the western waters must be more than two and a half feet, where that of the Missouri is one foot. Can such a current be stemmed by steamboats? (*c*)

Again: The altitude of Lewis river at Fort Hall is 4,500 feet; and at the foot of Fishing Falls, is 3,173 feet. [*d*] Now, the distance from the Fishing Falls of Lewis river to the ocean cannot be over 1,000 miles, and therefore, the descent of the river is, during the freshet, when the rapids are all buried, at the rate of three feet and two inches per mile; and this rate is accelerated by the pressure of its upper waters, which descend at a much greater rate. Only two questions remain: Are the Fishing Falls farther from the ocean than the proposed head of navigation on Clark's river? And is there any probability that a point so low down on Lewis river is more elevated than the vicinity of the North Pass?—especially when it is remembered that Lewis river [*e*] heads near the South Pass, (which is probably about as elevated as the North Pass,) and then descends more rapidly several hundred miles *to* the Fishing Falls than it does below that point?

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a Cox and Ballantyne. *b* Nicollet. *c* Lewis and Clark. *d* Fremont. *e* Fremont.

The map will answer these questions. Finally, let the reader reflect that during a high freshet, although the impediments in the bed of a river are overcome, and its superficial current thus equalized, yet, where its banks are narrowed, its speed is accelerated precisely in proportion to the narrowness of the chasm; that the streams of Oregon flow through stupendous ranges of volcanic mountains, filled with narrow gorges, and crooked ravines, and that there must be many places where the current is overwhelming, and many others where, in their descent, no skill or power could save the boats from being dashed to pieces. [*a*]

4. *A sea voyage across the Pacific.*—This portion of the route is unexceptionable; and, in fact the North Pacific is equal to any part of the sea, and superior to most parts. Since the original plan of Col. Benton, this portion of it has been amazingly improved by the introduction of steam vessels.

We will now suppose what we have shown to be impossible that the whole plan could be carried out according to the conception of its author—would it then change the route to India?

A sea voyage to Canton from New York is about 18,000 miles of distance, and (by a large allowance,) will consume five months. The number of vessels which sailed in 1845 to the East Indies, from the United States was 367; their average tonnage was 352 tons; and the average number of sailors 23 to each. [*b*] The distance from New York to St. Louis, (commercial route,) is about 1400 miles; from St. Louis to the foot of the great falls of the Missouri, 2,590 miles; thence to Clark's river 167 miles; [*c*] thence to the land portage across the bend of Clark's river, about 400 miles; thence across to Fort Colville 60 miles; [*d*] thence to the mouth of the Columbia, 613 miles; [*e*] and thence across the Pacific to Shanghae, about 5,500 miles; [*f*] making an entire distance of 10,730 miles, and being nearer than the sea voyage by 7,270 miles. The time consumed in making one trip from Shanghae to New York, when the waters are high, (and the trip cannot be made at any other time,) according to Col. Benton's plan, will be, from Shanghae to the mouth of the Columbia, in steam ships, 26 days; from the mouth of the river to the great falls, in steamboat, two days; thence ten mile portage, one day; thence to the Kettle falls, in steamboat, five days; thence across to Clark's river, three days, on horses; thence up the same, in 20 ton keels, twenty days; thence to the great falls of the Missouri, in six days, by wagons; thence down the Missouri to St. Louis, in steamboats, in ten days; and thence to New York in steamboats and railroads, in twenty days—whole time consumed ninety-three days. The amount of stock and number of persons necessary to be employed to bring into New York 350 tons, as much as one single vessel by the present route, will be: One steam ship, 352 tons, to mouth of the Columbia, with 25 hands; one steam boat to the falls, of 352 tons, and 25 men; men and stock for ten miles portage; three steamboats of 100 tons, and one of 52 tons, between the Great Falls and the Kettle Falls; 3,520 mules, with drivers,

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a Cox: and hence the Canadian word *Dalles.* *b* Appendix to Breese's Report. *c* Lewis and Clark. *d* Pilcher. *e* Lewis and Clark. *f* Maury.

to carry the goods sixty miles, in three days, to Clark's river; eighteen keels of twenty tons, with seventy-two men, to cordelle them up to North Pass; 352 wagons, with same number of drivers, and 1,408 horses to carry the goods to the Great Falls of the Missouri, (or if not, a railroad must be constructed;) six steamboats to carry them to St. Louis; one steamboat to carry them to Pittsburgh, and thence by railway, &c. to New York.

It is not possible to make more than one trip in twelve months, because of low water, &c. Now, is it needful that with these facts, further argument should be resorted to? Besides, a trip up and down the Missouri, in one season, would be very difficult, and upon the Columbia impossible; and one ship at sea will last forty years, whilst on these rivers, boats will not last over four years. And if the number of small boats, horses, and wagons are reduced in the foregoing calculation, this will involve a larger consumption of time than is now occupied in the sea voyage. With all which is enumerated, ninety-three days must be consumed to bring 352 tons to New York. Moreover, unless all the facilities are used promptly, the cargo which ascends the Columbia cannot be brought to the Missouri in time to catch the freshet, [*a*] (for both rivers rise together,) and must, therefore, be detained over a year, *i. e.* seven months longer than the sea voyage; and a cargo taken up the Missouri, never could reach the Columbia until after the freshet of that river had entirely subsided, because it never remains up as long as it will require to ascend the Missouri in steamboats.

For all which reasons, and many more, this route cannot be preferable to the present, either in safety, cheapness of transportation, or in substituting an exchange of commodities for a trade in gold and silver.

Upon a review of the foregoing article, it is believed that it has been proved incontrovertibly, that the navigation of the Missouri is impracticable to the falls, except for two months in the year; that it is at all times difficult, uncertain, expensive, and hazardous; that no land carriage short of a railroad across the mountains could, under any circumstances, be of service in a trip to China; that the Columbia cannot be navigated save with light and portable batteaux, during low water; that in high water, no steamboat *can be constructed* which would stem the current; that the land carriage across the bend of Clark's river is not susceptible of being converted into a rail or wagon way; that the harbor at the mouth of the Columbia cannot be entered by large vessels, and is, moreover, of a changeful, dangerous, and wholly unreliable character; and that if the Columbia could be navigated with certainty, the new route could not possibly rival the one at present in use.

It has been deemed proper to treat this question of a new route to India, by way of the Missouri and Columbia, in considerable detail, because of the very eminent source from whom it originated.

In a succeeding article, the practicability of a railway to the Pacific will be considered.

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a It is even more probable that a trip up the Columbia could not be made at all in one season.

ART. III.—THE RISE, PROGRESS AND INFLUENCE OF THE FINE ARTS.

BY ALFRED S. WAUGH, ESQ.

PAINTING.

From the perishable nature of the materials on which pictures are generally made, we have no very ancient specimens, by which we could be enabled to trace its rise and progress; consequently, its early history is shrouded in obscurity, and nothing remains to prove its actual condition, beyond the records of the past, or the acknowledged license of the bards of antiquity. From the paintings on the interior of the tombs of the Theban kings, it is very perceptible, however, that its progress was far behind that of sculpture;* and, in the ruins of Pompeii, the frescoes are far inferior to the works of the chisel, to be met with in the same city. We have many records of early Grecian painters, in the works of the classic authors: but, alas! the bright emanation of their pencils have long since perished.

What we term the old masters, are in comparison with the sculptors of antiquity, as but men of yesterday. It is but a few hundred years since the use of oil, as a medium, was first adopted;† since then the art of painting has attained great perfection, and now takes precedence of all her sisters. It is capable of doing that which cannot be achieved by sculpture. With the pencil, "the baseless fabric of a vision" can be made to flit before the wondering gaze, and clouds, and vapor, and light, and color of the most subtle texture, to throw a reality o'er the canvass, rich in the ever varying hues of infinite nature. It is capable of conveying an idea of infinity, and of carrying perspective into the regions of unmeasured space, as may be seen in

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**Note.*—These paintings are supposed, by the Egyptian Savans, to have been executed during the reign of Sesostris, a monarch remarkable for his patronage of Art, who lived seven hundred years before the christian era. The walls of these tombs are decorated with a vast number of hireoglyphics, still glowing in all the freshness of new productions and exhibiting in the designs and combinations of their groups, some slight knowledge of composition which render them deeply interesting to the artistic historian.

† *Note.*—Of this wonderful discovery it is related that John Van Eyck, a distinguished artist at Bruges, having finished a picture with great care, placed it in the heat of the sun to dry; when the board upon which it was painted, split. Mortified at seeing the fruit of so much labor destroyed, he determined to attempt to discover, by the aid of chemistry, some process by which he might in future avoid so distressing an accident In this research he is said to have discovered the use of linseed oil, which he found the most siccative; and it was for some time generally believed that it was to this circumstance that the art was indebted for the discovery of oil painting in the year 1410.—[*Painting, its Rise and Progress, from the Earliest Ages to the Present Time.* Compiled from the best authorities. Boston: published by John P. Jewett & Co. 1846.

the works of Martin and Danby, artists, whose genius have carried the art to as great an extent, if not greater, than any other with whose productions we are familiar. In the Belshazzer's Feast of Martin, the perspective, I might almost say, is interminable; and the multitude of human beings, and other objects introduced, impress the beholder with a degree of awe that belongs to no other painting, either ancient or modern, which I have ever seen. The main figure, that of the prophet Daniel, stands erect, inspired with all the commanding majesty which his divine commission gives him. The revelling king, in the midst of his lordly courtiers, has shrunk from his throne, with dread terror at the luminous handwriting on the wall, and is humbly soliciting the wise man of God to interpret its meaning; consternation is depicted on the countenances of the vast multitude who surround him, and the innumerable lamps of the regal palace have waxed pale, before the refulgence of this mysterious and unearthly light, which, in its intensity, causes all others to fade beneath its terrific splendor; and from this source alone, is the entire picture lighted.

In this single production of the pencil on a flat surface, we see a power of optical illusion, of greater magnitude than any which can possibly come from the chisel. Its mastery over color and chiaroscuro, irresistably chains the attention; and, by sweetly deceiving the eye with its magic charms, wins, alike, the civilized and savage to its shrine, and claims homage from all ranks and conditions of men.

When we look upon the landscapes of Claude—that sweet poet of the pencil—we feel all the pleasure which the contemplation of reality would give. In his sunrise views, we actually feel "the wild freshness of morning;" and, in his sunsets, all the balmy sweetness of declining day, we inhale the fragrance of flower enamelled fields, bask in the clear light of the summer's day, enjoy the cool shade of sylvan retreats, or are refreshed by the breeze which has kissed the calm surface of a lake, clear and pure as the element itself. The trees glow in the warm smiles of the departing god, and the streams glide on in pelucid tranquility. His was the pencil of inspiration, and his touch was truth.‡

‡ *Note.*—For thirty years his innate powers lay slumbering, until circumstances roused the divinity within him and called them forth to be the wonder and admiration of succeeding generations. This inimitable painter was born at Lorraine in 1600, and labored in the same humble calling with his father, which was that of a pastry cook. Remarkable only for inattention towards the simple pursuits of this very palatable art, he sorely annoyed his parent by his apparent stupidity, and at length was deprived of the shelter of a parental roof, turned loose upon the world to find a living as best he could. Hiring himself as valet to some young artists who were going into Italy, soon after his arrival at Rome he entered into the service of a landscape painter of no great fame, Agostino Tassi, whom he accompanied to the fields whenever his employer sketched from nature. Observing the progress of imitative art, a strong desire of learning its principles took possession of his breast, and in the temporary absence of his master, one day, made an attempt, and to his surprise and delight, found such ample encouragement in the success of his first effort, as induced him to occupy his leisure hours in untutored study. His employer, pleased with these evidences of superior genius, gave him great encouragement, in the hope of deriving assistance in his own great works, at some future day. In ten years from that time, Claude Gelee, the

When we contemplate the rapid developement of this man's genius, we may indeed exclaim

Painters are born, not made.

The two greatest painters among the old masters, are Michael Angelo and Raphael. Angelo was remarkable for the vastness of his conceptions, and the vigor of his execution. His mighty mind, disdaining the usual process of embodying his designs in clay, previous to executing them in stone, went boldly to work on the marble, without any other guide than the image already perfected in his own brain, with a certainty, indeed, of rendering the marble flexible before him.§

A great master of the anatomy of the human frame, he needed no other guide than the image thus clearly presented to the mind's eye. In the three great departments of art, he at once excelled; but was more devoted to sculpture than its sisters, painting and architecture. The productions of his chisel are more calculated to inspire awe, than to create pleasurable sensations. In all his designs you see magnitude, solidity, and strength; but little or no delicacy. His school belonged to the sublime.

Raphael, on the contrary, possessed of all his knowledge of the human figure, had a delicacy of feeling and sublimity of sentiment, both in conception and coloring, which threw a charm over whatever his immortal pencil touched, and drew from admiring crowds the acknowledgment of his well-earned title: the Prince of Painters.

The school of Rome, to which this great master belonged, had the advantage of possessing many of the richest treasures of Grecian art, either brought from Greece, or executed in Italy, by artists brought from that country. The study of these precious remains, no doubt, gave an exaltation and refinement to her students, which soon raised her to an enviable position in art, and entitled her to precedence of all others. The knowledge of design, beauty of form, and grandeur of style, with the simplicity of just expression, exhibited in the works of this school, stamped her productions with the seal of authority, which rendered them models of imitation to succeeding generations, and laid down rules, from which it is considered almost heretical to deviate materially.¶

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poor outcast pastry cook, was known as Claude de Loraine, the most finished landscape painter that ever charmed the world with the witcheries of the pencil. He died in 1682, at the advanced age of eighty-two years, leaving behind him a great number of gems of art which are prized beyond all others in the same department, and are rarely to be found outside the walls of the most renowned galleries of Europe. His studies from nature are as perfect as genius can make them, but in many of his compositions, he frequently exhibits want of judgment in the introducrion of objects irrelevant to the subject, and totally inconsistent with the character of the scenes represented. His skies are possessed of a charm, surpassed only by those of nature, and his trees have a freshness and reality which have never been excelled by any other master.

§ *Note.*—"Before whom the marble was flexible."

¶ *Note.*—This school was devoted to the great principles of art, and paid no more attention to coloring than was positively necessary to draw the line of demarcation between Painting and Sculpture, or as a writer on art expresses it, "be-

"Painting, according to Vanmander, the historian of the Flemish artists, had been carried into Flanders about the time of Giotto, by some Flemings, who went for the express purpose of learning it; and he says that "the mode of painting, brought from Italy, was with gum and eggs, having been so practiced at Florence, at its first commencement, by Cimabue." It spread in practice among the Germans about the same time, and each of these countries established a mode of art, or style, for themselves. It was in Italy alone, however, that any true perception of what was the proper object of art, appears to have been felt, and there it was first exhibited; and, even there, it dates its principles from one city and its dependencies, viz: Florence. In this place, alone, it remained pure in its object, the delineation of character and expression, with selection of form, and simplicity, and unmixed purity of effect. A style of design which, pursuing the first impulse of the art, viz: the representation of events at their most impressive moments, leaves minor objects out of consideration, and aims solely at fulfilling its purposes in an intuitive manner, upon the mind of the observer. That style Giotto had founded; it was improved in effect by Masaccio, strengthened by Bartolomeo della Porta and Leonardo de Vinci, and finally perfected by Raphael and Michael Angelo.

"To this most important aim of the art, the introduction of oil in painting brought no efficient aid. What has been said of its benefits, applies only to the ornamental, or less important application of it. The objects of the grand style, viz: beauty of design, and purity of expression, the weakest materials are capable of presenting to the imagination; and, therefore, notwithstanding the brilliancy of color and effect, which was afforded by the use of oil, it was, in a great measure, disregarded by the Florentines; or, if employed by them, they carried into its practice the defective hues of fresco, to the exception of Leonardo de Vinci and Fra Bartolomeo della Porta, [born at Florence, in 1479,] who followed closely the line of coloring laid down by the former, his immediate predecessor. To him the art is indebted for the first conception of the union of true grandeur of style in design, with a suitable dignity and depth of coloring. The subjects he chose were generally of a religious kind, which nearly excluded naked figures; but he amply compensated for that, by the mode in which he composed his draperies, and arranged his groups. Of him, Raphael is supposed to have acquired more information than from any other source, till he had seen the works of Michael Angelo, in

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tween painting varied with colors, and chairo-scuro," (i. e. *chairo*, light, and *oscuro*, dark.) It was not until the middle of the fifteenth century that this effect was at all understood. Very little of what we call projecting shadows was known among painters previous to this time; and prior to the appearance of Leonardo de Vinci, the painters were in the habit of placing their figures on grounds so extremely light, as to resemble drawings on white paper, deriving no relief from the aid of necessary shadows.

Raphael having gained great reputation while in Florence, was invited by Pope Julius II, to come to Rome and paint a suite of apartments in the Vatican, called the camere della segnatura, but better known at the present day, as the stanze or chambers of Raphael.

the Listmi Chapel. It was Bartolomeo who changed the taste he had imbibed from his master, Cietro Cerugino, and directed it in the course wherein he afterwards surpassed all that the modern art of painting had effected.

This delightful art, supported by an illustrious patronage, derived from its knowledge, ability, and the purposes of state, the increase of riches and of intellectual cultivation; but most materially from religion, now attained its second era of glorious success. A constellation of ingenious men, endowed with uncommon talents, appeared to spread its light once more through the world, and painting was perfected as far, perhaps, as human nature can carry it, in the works of Michael Angelo, Raphael, Titian, and Corregio.

Although no one of these four great men appear to have made the Grecian principle of select beauty a precise object of attention, yet, in those branches of the art which they more immediately cultivated, they must be considered as having attained the very highest rank.||

In the last great work of Raphael, the Transfiguration, now in the Vatican in Rome, you behold all the essentials to inspire awe and pleasure; and, although this work was never completely finished, it remains in the same state he left it three hundred years ago, for no hand can be found daring enough to profane the canvass of the Prince of Painters.

At the early age of thirty-seven, this brightest gem in the diadem of art quitted the world; and, as his spirit was about to ascend to a holier sphere, he expressed a desire to rest his dying gaze on this, the last effort of his genius. So highly were his transcendent powers appreciated, that the sovereign Pontiff, attended by the Cardinals and other dignitaries of the Church, administered to him the last solemn rites of religion, and his soul ascended from earth to Heaven, amid the prayers and incense of the Catholic faith.

> Around were gathered earth's magnates. Mitres
> And coronets sparkl'd in the expiring
> Light of declining day. The keeper of
> The keys, knelt in meekness beside the couch
> Of him, whose spirit sprang from the Eternal.
> Religion lent itself to swell the grandeur
> Of devotion. Music and poetry
> Floated upward to the throne of Him who
> Reigns without a rival. Ministering angels
> Waited on the wing, to bear the emanation
> Of the divine spark to the source whence it
> Came, and the great ones of this world reverently
> Bow'd their gem encircled brows,
> And did homage to the majesty of intellect.

The death-bed scene of this potentate in art, forms a splendid subject for the pencil, and bears ample testimony of the homage paid to genius—the reverence of this world's aristocracy, to *the aristocracy of nature*—that high nobility, whose patents of creation are direct from the high court of Heaven itself.

Note. || Rees' Cyclopædia, article on Painting.

ART. IV.—EDUCATION.

BY JOHN H. TICE, ESQ.

In the conclusion of our article in the November number of this Journal, we stated substantially, that few States had adopted any system of education, and fewer still had carried out what system they had adopted. We did not intend to insinuate that the subject of education was not a popular one—one that did not secure general attention, nor elicit general sympathy; for we know that the contrary is the fact. But we intended to warn our readers against the common and fatal error, that to secure the blessings of the common school system to a community, it is only necessary to adopt some elaborate system—some splendid machinery—and that all that is desirable will follow. This is a grievous and fatal delusion, proven to be such by sad experience, in many of our States. The school systems of many States are as good as those of New York and Massachusetts, and their means far more abundant; yet where are any States that can be compared to them? Nay, more, it is only within the last ten or twelve years that the pre-eminence is due to New York and Massachusetts. Why is this so? Anterior to that period they had their school systems, but in nothing remarkable were they distinguishable from the rest of the States that had systems. Moreover, their present proud position is not owing so much to any extraordinary innovations on, as to the infusion of life into, the old system, and bringing out its contemplated results. Innovations, to be sure, were made, but more with reference to developing the old system, than to give it any new principles. To realize what was contemplated by the old system, additional means as auxiliaries were required. Such, for instance, as "Normal schools" and "teachers' institutes." These were necessary addenda. A supply of professional and qualified teachers was necessary to make the system succeed; to employ persons who casually may be thrown out of other employments, or who, for want of energy or ability, have failed in every thing else that they have undertaken, is a misappropriation of moneys, for the expenditure of which the community does not receive an equivalent; and not receiving the "*quid pro quo*," are unwilling to bear the burthen of taxation necessary to sustain the school system. However faultless that system may be in its details, if the means are lacking to put it into efficient and vigorous operation, it will never secure in its favor public opinion and affection; and it must and will fall. But to supply the public schools with professional teachers, such as have studied the art of teaching as thoroughly, and become as familiar with its details as physicians are supposed to be with the properties of medicine and human physiology, attorneys with law, and clergymen with divinity, some means must be devised

for their training and education. Hence, the establishment of Normal schools and teachers' institutes. These, furnishing teachers of superior acquirements and skill, who, making the common schools what they should be, make them popular; and being good, and consequently popular, the means for their support are cheerfully furnished. Thus the benefits of the system, by using the proper appliances, are realized, and the common schools, as the cheapest and best, supplant all others—carry knowledge to every door, however humble—and spread their beneficent influence on morals and intelligence throughout the borders of the State.

Another fatal error in regard to a system of education is, to commit its care and execution to some cabinet, or other officer, who is already overcharged by law with duties. Many of these officers, perhaps, feel no interest whatever in the matter; or if they do their other duties, render it impossible to give the subject that attention and examination, in detail, that is necessary to discover and supply its defects—or if perfect, to put it into successful operation. We are aware that this is done under the plea of economy, but that it is most wretched economy, is evidenced by the result of the school system in every State where it obtains. The successful administration of a school system is entirely too vast and intricate to be confided to an officer who has already his hands full.

The school fund has not only to be taken care of, but its increase, productiveness, and proper expenditure has to be cared for. But its proper application alone would be sufficient to require the entire attention of one officer. Before he is qualified to recommend any plans for, or improvements in, the schools, he ought to be familiar with all the systems of education, mode of administration, and improvements in schools elsewhere. While we would not entirely discard experiments, we think it altogether wiser and safer to avail ourselves of the results of the experiments of others; especially when others have made almost every variety of them, and under more favorable auspices than we possibly could. Some of these experiments have turned out entire failures, but others have been as eminently successful. The successful ones, (of which we may avail ourselves gratis,) offer us a sufficient basis to commence operations on. If we bring up our schools to the standard of the best schools in the Union, and exhaust the improvements made elsewhere, then it will be time enough for us to think of experiments. But in the beginning, the best system of, and all the recent valuable improvements in, education ought to be adopted. This would, perhaps, suffice us, and be all that we should aim to attain for one generation.

Thus it will be seen that a vast field is open for the exploration of the officer who may be charged with the duties of superintendent of the school fund. Entirely too vast for an officer who has not all his time for the purpose, and whose heart is not in the work. For, depend upon it, the last qualification is indispensable to make an efficient superintendent of public instruction. He should feel that the collection of statistics, facts, and looking after, and taking care of, the funds constitute but a moiety of his duties. Imbued with the importance of

the subject committed to his hands, he should feel it his duty to impress that importance upon the minds of the community, and excite public attention, and enlist public favor in its behalf. Nothing can be accomplished until the public mind has been prepared for it; hence every thing that is necessary to be done to prepare the way, necessarily will come within the scope of such officers' duties, and he must perform it, if he wishes to perform his duties faithfully, or become a public benefactor. He will have to do, what is very expressively called by politicians, "keep it before the people;" and for this purpose he must avail himself of every means of access to the public mind. The press, the pulpit, the forum, the stump, and the lecture-room, must all be employed and enlisted in the cause, until those of the community who will not yield from a sense of duty, will, like the man in the parable, being wearied with importunity, give what is asked.

We, on a former occasion, promised to give a synopsis of the school systems of the several States; but upon examination, we find that this would swell our article beyond all bounds, and not give us room for our *projêt*. We will, therefore, content ourselves with merely stating such facts as are necessary to understand and enforce what we have to say.

Upon the subject of having a responsible head to the common school system in each State, there seems to be a unanimity of opinion. But the legislative provisions of the different States as respects the constitution of that head, are various and contradictory. While, therefore, the legislation of the States does not settle the best form of organization, we must look at the organization and constitution of that school system in those States, wherein its success has been least equivocal, and produced the most marked and brilliant results. To show what the legislation has been, the following States have assigned a distinct officer and separate department to their common school system, viz:

Maine and Massachusetts have each established a Board of Education, with a secretary of the board. The secretary performs the duties imposed upon the superintendent of common schools in other States, and is paid a regular salary from the State treasury—the former $1,000 and the latter $1,500. New Hampshire, School Commissioner. Rhode Island, Commissioner of Public Schools. Connecticut, Commissioner of the School Fund and Superintendent of Public Schools. New York, the Secretary of State is ex-officio Superintendent of Common Schools, with a Deputy Superintendent, who has charge of the common school department. New Jersey, Louisiana, Tennessee, Michigan, Wisconsin, Iowa, and Kentucky, Superintendents of Common Schools, or of Public Instruction. Pennsylvania, Ohio, Illinois, Missouri and Mississippi, Secretary of State ex-officio Superintendent of Common Schools, or of School Fund. Vermont, Governor ex-officio Superintendent of Common Schools. Virginia, Auditor ex-officio Superintendent of Literary Fund. With the provisions of the recent laws of Delaware, Maryland and Indiana, we are unacquainted. South Carolina, Commissioners of Free Schools, appointed by the legislature. North Carolina, Georgia, Florida, Ala-

bama and Texas, have, as far as we know, either no system, or have not yet organized any. Texas, however, in her constitution, provides a fund for free schools.

The following States have established the free system: Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New Jersey, Delaware, Maryland, South Carolina, Mississippi, Louisiana, Michigan, Wisconsin and Iowa. The rating system obtains in New York, Pennsylvania, Ohio, Illinois, and Missouri. In the month of August last, the vote for imposing a tax to establish free schools was taken in Kentucky and Indiana. The political papers have informed us that one of these States was carried by the Whigs, and the other by the Democrats; and the journals of the respective parties have, upon such success, congratulated their friends with assurances that the Republic was safe—but have never given any information of what has been the fate of the free school question. The Republic is only safe, when there is a general diffusion of knowledge among all classes. If the Republic totter, the temporary success of either party will not save it. It must rest on a broader, firmer, and more permanent foundation—the virtue, integrity, and intelligence of the people. Where these are wanting, or where the means of producing them are lacking, the Republic is not safe, let the reins of government be in whose hands they may.

Virginia, North Carolina and Georgia, adhere to the indigent system; the former two pay for the education of poor children, from their literary fund, the latter out of the State Treasury.

The following are the amounts expended by the several States, during the year 1847:

Maine—State fund,	$27,589 35
Raised by taxation, (estimated,)	240,000 00
New Hampshire—State fund,	9,449 22
Raised by taxation	138,333 60
Vermont—State fund,	2,888 37
Raised by taxation,	71,177 27
Massachusetts—State fund and Normal schools,	9,757 56
Raised by towns,	696,488 75
Rhode Island—State fund, annual appropriation,	25,000 00
Raised by taxation, estimated,	54,000 00
Connecticut—State fund,	126,126 80
No report of amount raised by taxation.	
New York—Annual appropriation State fund,	220,000 00
Raised by taxation,	220,000 00
Received on rate bills,	462,840 44
Proceeds of local funds,	156,974 20
New Jersey—State fund, annual appropriation,	30,000 00
Raised by taxation,	80,850 53
Pennsylvania—State appropriation,	196,804 04
Raised by taxation,	436,727 80
Delaware—State fund,	45,239 74
Taxation,	15,901 82

Maryland—State fund, - - - - - - - $34,069 26
Taxation, no returns, except city of Baltimore, 41,200 00
Virginia—Literary fund paid for the education of the poor, 68,140 05
North Carolina—Income of Literary fund. No expenditure stated, - - - - - 20,824 78
South Carolina—Paid by State for free schools, - 33,527 52
Taxation, no returns.
Georgia—Tuition of poor children, - - - - - 7,692 37
Florida—No account of any expenditure.
Alabama—No account of expenditure. School fund invested in Bank stock, $1,015,856 00; annual income estimated at $98,000. Not realized, in consequence of insolvency of Banks.
Mississippi—No returns. Funds esiimated at $1,000,000, consisting principally of unsold lands. Free school law passed March 4th, 1846. Appropriates all fines, forfeitures, and receipts from every kind of licenses, to State school fund. In addition to which, the officers of each township are authorized to levy a tax, not to exceed State tax, for support of schools in each township.
Louisiana—State fund, - - - - - - 5,456 96
Raised by taxation in 37 parishes, - - 251,443 67
Estimate of amount raised in 12 remaining parishes, not heard from at date of Superintendent's Report, - - 48,334 00

The School law of this State was passed May 3d, 1847, and the schools were put in operation first Monday in December, 1848, except in the city of New Orleans.

Texas—State fund, - - - - - - - - 7,710 58
Taxation, no returns.

By provision of the Constitution, one-tenth of the annual revenue of the State is set apart for a permanent fund, for the support of "free public schools." And no school lands shall be alienable in fee, nor leased for more than twenty years.

Arkansas—We have no authentic information.
Tennessee—State fund apportioned in July, 1848, - - 114,227 18
No returns of amount raised otherwise.
Kentucky—No authentic returns. New school law recently adopted.
Ohio—State fund, - - - - - - - - 127,117 69
Half-mill State tax for schools, - - - 74,201 82
Raised through other sources, - - - 164,223 68
Michigan—State fund in May, 1847, - - - 31,274 00
Taxation, (incomplete,) - - - - 14,000 00
Indiana—Principal of School fund is $2,195,149 59.
Held by the several counties income from same, estimated at - - - - - - - 120,000 00

This State has recently, we believe, adopted the free system.

Illinois—No State fund; returns imperfect. Of 99 counties in the State, but 57 reported to Secretary of State in 1847. These do not report the productiveness of their respective funds, the aggregate capital of which is $551,780, which at six per cent. would be, say - - - - - -	33,000 00
Only 21 of these counties report as having collected school tax under the provisions of the 84th section of school law. The aggregate amount collected is, - - - - - -	8,763 00
Of which Cook county collected more than one-half, viz: - - - - - - - - - -	5,204 00
Missouri.—State School Fund apportionment of 1847,	23,720 02
Amount received on rate bills, and from township and county school funds not stated.	

The State School Fund amounts to $575,000, invested in State Bank stock, of which $515,518 83 was invested in July, 1839; the balance in 1840 and 1842, which yielded, in dividends, to November 16th, 1846, $110,000. Whereas, at legal interest, it would, at the lowest calculation, have yielded $300,000.

The amount of the principal of the fund consists principally of the amount received from the United States, under the "Deposite Act." Saline lands, belonging to the State, also constitute a part of the fund, but we are without any data to show their extent or value.

The apportionment for 1847 was forty cents per capita of persons of educable age. The amount of apportionment of 1846 was fifty-eight cents per head.

Iowa.—This State has a General Superintendent, Thomas H. Benton, jr. Its school funds consist of the usual congressional bounties, in lands and funds. The State law donates all escheated estates, all military fees, fines before courts and forfeitures to school purposes. We have no returns of expenditures.

Wisconsin has a State Superintendent. Liberal provision has been made, both by constitution and law, for a school fund to be devoted to common schools, academies, and Normal schools; but amount not to exceed twice the amount raised by tax. The fund constituted of similar items as in Iowa.

The statistics embraced in the above enumeration, show that the expenditure is always in proportion to the density of the population, establishing beyond question, the necessity of adopting a common school system at places where there is a large concentration of human beings. That it has been deemed expedient in all cities to make ample provision for the education of all classes, the facts abundantly prove. But the reasons of these provisions are not so plain. No doubt they are the offspring primarily of the benevolent and philanthropic feelings of a few; but that whole communities should yield so readily to their establishment, and at such an expenditure of money, must be owing to the fact of the general opinion in the community of their absolute necessity, as nurseries of morality, training the coming generation to habits of virtue, and by diffusing knowledge, preparing

it for future honor and usefulness. The several cities in the Union have, during the year 1847, expended the following amounts:

Boston, -	$232,772 37	Baltimore, -	$67,054 08
New York, -	172,262 59	Cincinnati, -	48,885 03
Philadelphia in '45,	227,205 42	New Orleans, -	116,104 00
St. Louis, -	12,565 06		

Having now accomplished the two objects we proposed, viz: To show that there is general interest felt throughout the Union on the subject of education, and the provisions and expenditures for that purpose in the several States, we must proceed to our main object, viz: Present our *projét* for the organization and support of common schools in Missouri. We regret that our limits did not permit us to give an analysis of every State school system in the Union, in order that what we have to say might be better appreciated by our readers. We have, however, said enough to convince all of the necessity of speedy legislative provisions in the premises, that an efficient system ought to be adopted and put in operation.

The first consideration in projecting a system, is the means to put it in operation, and sustain it when established. We would make the State School Fund the basis and centre of operations. But we have seen above, that in consequence of its injudicious investment, its productiveness is too insignificant to effect much by that means. There are but two ways to increase its productiveness, viz: 1st, to withdraw it from its present investment in bank; or, 2d, for the State to guarantee six per centum per annum upon the capital. We are not familiar enough with the condition of our banks to know whether it would be prudent to withdraw it, nor are we able to say whether the State has a legal right to do so, if disposed. As at present advised, we favor the project of the State guaranteeing six per centum upon the amount of investment. The bank now declares about three and a half per centum per annum. This would leave two and a half per centum to be made up by the State, or about $14,375.

To increase the capital of the State fund, we would recommend to appropriate the proceeds of the five hundred thousand acres of land to the school fund, and to loan the proceeds thereof to the State, to pay off her other debts, at an annual interest of six per cent. The capital thus added to the school fund, would increase that fund at the congressional price of land per acre, $625,000, and would yield an annual revenue, together with that invested in bank stock, of $72,000. To this add the amount that would be derived from Saline lands, lands escheated to the State, lands purchased or forfeited for taxes, as provided for by existing school law. As we are without data of the value of these, we estimate their annual productiveness at $3,000, which, added to the above, will make the sum of $75,000 for annual distribution.

We would then have, as a basis to commence operations, the sum of $75,000. The distribution of this fund ought to be made to depend upon certain conditions. These conditions, among others, ought to consist of the following, viz: That no city, town, village, township or district, shall be entitled to any share in the apportionment, which has

not transmitted, through the proper officer, to the superintendent of common schools, an official document, showing, amongst other things, the number of persons of educable age within the limits of such city, town, village, township, or district—that a school or schools have been organized and kept within their limits during the year, for at least the space of three months—the number of schools, and the number of pupils taught, &c., and that there has been a tax assessed, collected, and expended for tuition, within said city, town, village, &c., as aforesaid, of a sum not less than the preceding annual apportionment per head for the number of persons of educable age, within such city, town, &c. Should a school law pass with this provision, it would give, added to the State fund, a sum of $150,000, to be expended annually for education in the State. In the State of New York, the law requires this, as a pre-requisite, to be entitled to a portion of the State apportionment. In Massachusetts, the law requires that every town, &c., shall have assessed and collected, for educational purposes, the amount of $1 25 per head for the number of persons of educable age, to entitle them to a share in the apportionment. The same provision is engrafted on the school laws of various other States, and has been one of the most efficient means of putting the school system in operation, and most salutary to sustain and maintain the schools, when once established; because their management, government, &c., are made, by this means, a matter of personal interest to every tax payer.

The next consideration is, the value and productiveness of the sixteenth sections, and other lands donated by Congress for school purposes. We have no date, either to show the value or productiveness of these. We estimate their present value at $2,000,000; those in the city of St. Louis, alone, being worth $250,000. These ought to yield a further sum of $120,000, as a township school fund. Fines, penalties, forfeitures, &c., constituting the county school fund, we estimate at $5,000. The means to put in operation and sustain a common school system, in Missouri, would then be as follows:

State school fund, (as proposed,) - - - -	$75,000
An equal amount of School tax levied, - - - -	75,000
Township School fund, - - - - - -	120,000
County School fund, - - - - - - -	5,000
Total, - - - - - -	$275,000

The last report of the superintendent of common schools, shows that the whole of the last apportionment of the State school funds was made to fifty-two counties, leaving almost one-half the counties without any appropriation. The fifty-two counties report a population of educable age, a fraction less than 40,000. To which 20,000 must be added for the city of St. Louis, and perhaps 30,000 more for the balance of the State, from which there were no returns. This estimate would make the educable population of the State about 90,000. This estimate, from the ratio it bears to the population of the State, is too low. But, as a large portion of the educable youth are attending private schools and seminaries, we suppose that the number who would attend the public schools, and for whom provisions should be made,

will not much, if at all, exceed the estimate, viz: 90,000. Assuming, then, 90,000 as the number to be provided for and $275,000 as the means to educate them, this will give the sum of $3 plus, per head. In Massachusetts, the amount is $3 40 per head; and the amount for the annual average of those who attend school, is $5 75. Assuming, then, the Massachusetts average, the means will be ample to educate 48,000 pupils.

In the city of Boston, the cost for tuition per annum, in the public schools, per scholar, is - - - - - $11 00
In the public schools of St. Louis, it is - - - 8 00

This would show that education is cheaper in Missouri than Massachusetts. If so, then the difference is in favor of our estimate.

But the people of Missouri will not furnish the means, unless they be properly and beneficially expended. Look over the reports of the superintendents of common schools in either the south or west, and the greatest drawback to the establishment of common schools is the want of competent and qualified teachers. If these could be had, there would be no difficulty of establishing common schools, nor a lack of means to support them. It cannot be expected that any community will tax itself to raise money, the expenditure of which produces no visible good. It is necessary that the schools should have the public confidence, to meet with public favor. But they can have neither, unless they are taught by competent and systematic teachers. But the requisite number of teachers, thus qualified, cannot be had in the west. To some extent, there may be an aversion among western people to take up teaching as a profession. But, the principal cause is, there are no institutions in the west, where teaching is taught as an art, in which a professional knowledge of it can be obtained. The consequence is, either we must employ those who have enjoyed but limited means of education, or who have educated themselves, or we must wait for the slow process of immigration from the east of teachers to fill our schools, or we must erect seminaries of our own, to educate our teachers. If we employ the first, our progress in establishing schools will be slow and difficult, and not amount to much when done. If we look for a supply of teachers by immigration, we can rarely expect to receive any but second and third rate teachers, who have been unable to succeed elsewhere. There will, to be sure, be some exceptions to this rule, but they will be too few and far between to rely upon for the purposes of building up and sustaining a popular and efficient system of common schools in the west.

Ask those who have devoted their time and talents to the cause of popular education in any of the Western States, what is the greatest obstacle to their success, and they will answer you—the want of competent teachers. Ask the commissioners of any school district why there is so much apathy and indifference on this subject in their respective districts, and why their schools languish for want of support, and you receive tne same answer. Ask the State superintendent why the school law remains a dead letter upon the statute book—why the people are so reluctant to avail themselves and their children of its blessings—and they likewise tell you that it is impossible to carry it

into effect until some measure is devised to supply our schools with such teachers as will bring the schools into public favor. So general is this complaint, and so blighting is it in its effects, that it has rendered abortive every humane and philanthropic effort to establish any public school system in the west. If we say not the truth, believe us not. The Hon. Thompson Campbell, superintendent of the common schools of Illinois, in his report to the last legislature of that State, makes the following judicious remarks upon this subject:

"There is no department in the common school system where more responsibility devolves, or upon which the final success of the scheme depends, than is confided to teachers. The end and aim of the whole law converges to this point. The great good, and incalculable benefits which the law is intended to confer upon the rising generation, are dependant upon them for their development and practical application. They are the medium through which the light of education penetrates the clouds of ignorance that cluster around and obscure the uninformed mind.

"Many of our sister States impressed with the importance of employing none but the ablest and most competent teachers, have established institutions intended expressly for their education. These seminaries for the preparation of young men and women for the arduous profession of teaching, have been attended with the most flattering and encouraging results.

"The want of competent teachers has been an evil loudly complained of, and difficult to remedy. The policy of establishing and maintaining Normal schools, for the education of teachers, was first brought before the people of New England in 1824, and like all works of progress, reformation and improvement, it experienced its full share of opposition; which, however, gradually yielded to, and was gradually shamed out of existence by the marked change in the improved condition of the schools, and the elevated character of the teachers. Normal schools, for the education of teachers, are now considered as almost indispensable auxiliaries to the system of common school education."

The Hon. Falkland H. Martin, superintendent of common schools of Missouri, in his report to the last legislature, urges the same subject upon the consideration of the legislators of Missouri. The following is his language:

"I cannot refrain from again introducing to the notice of the General Assembly, the prevalent opinion, that a school for the education of young men to be employed hereafter as teachers, would be of almost incalculable benefit to our common school system. Several of our sister States have adopted the plan, and derive great and essential benefits from it."

In the report of the Committee on Education of the State Senate, made to that body on the 25th day of January, 1847, by the Hon. W. Claude Jones, chairman, we find the following strong language upon the same point:

"One great difficulty in the way of reducing our common school system to successful operation, and experiencing the full benefits to be derived from it, is the want of competent teachers. This want is sensibly felt in our State, and the attention of the legislature has been called to it time after time by the superintendent of the common schools and the executive; but nothing has yet been done on the subject. The necessity of competent teachers becomes more apparent every day. The demand is increasing rapidly, and we have no means by which we can supply that demand, by those who are competent to discharge the duties of common school teachers. Hence originates the necessity of some public institution, by which teachers can be educated for the State."

The joint committee to visit the State University, through their chairman, Hon. James S. Rollins, in behalf of the committee of the Senate, and Hon. W. P. Johnson, of the committee in behalf of the House, in their report made to the last legislature of Missouri, submitted January 16th, 1847, the same subject is brought to the notice of the legislature, and concludes by recommending an additional professorship in connection with the University, to be devoted to the "*Theory and Practice of Teaching.*" The following is the language of the committee:

"It is known to almost every one who has given any attention to the subject, that one principal reason why our system of common schools has not been more successful and more generally adopted, and its advantages more extensively felt and realized throughout the State, has been the difficulty of procuring well qualified *school masters.*

"And it is probable that this severe drawback upon the advancement of education will long continue, unless the State comes forward and lends her aid in remedying this great defect in our system. The truth is, the efficiency of any plan which may be devised to aid in the education of the mind of the country, must at last depend upon those who are to carry it out, to execute it, and keep it in successful operation; and just so long as any considerable portion of the common school teachers throughout the State remain untaught, or half educated themselves, just so long we need not expect any great and lasting benefits to be derived from any system, however perfect, which may from time to time be adopted."

We might continue quotations almost *ad infinitum*, to the same effect, from documents emanating annually from the Executive and Legislative Departments, for the last ten or twelve years. Gov. Edwards has repeatedly called the attention of the Legislature to this subject, and submitted a plan to the last Legislature, for the organization and maintainance of a school for the educatien of teachers. The present Governor, Hon. A. King, as early as 1836, in the State Senate, endeavored to have a department in the State University allotted for the express purpose of educating common school teachers. The quotations we have made, and those to which we have adverted, we deem sufficient for our purpose. They establish the absolute necessity

of an institution for the purposes designated—demanded alike by the wants of the country, and the welfare of those who are about entering upon the stage, to act their part in the great drama of human life, either for weal or woe, and whose good or bad influences will be felt long after they will have passed from the stage of existence.

We do not know that it is necessary to add anything more, to produce the conviction that the measure proposed is of absolute necessity, in order to secure a speedy action in the premises. But we cannot refrain from quoting an extract from the report of Col. Young, as superintendent of common schools of the State of New York, made to the Legislature of that State, in 1844. The views expressed are creditable to their author, who is one of the most enlightened statesmen of the age, distinguished alike for his sagacity and practical wisdom as a legislator. We commend his views to the calm and earnest consideration of the Legislature of Missouri. The following is his language:

"That a teacher of proper capacity and acquirements, thoroughly educated in a Normal school, can communicate more learning to his pupils in six months, than is usually communicated, under the old system of teaching, in double that period, is fully believed. If it were affirmed that a mechanic, who had been carefully instructed in the theoretical and practical departments of his trade, would do twice as much work, and do it twice as well, as one who should assume that, without previous discipline, he was possessed of the trade by instinct, the affirmation could hardly fail to be credited. And is it not equally apparent that the educator, whose functions embrace, in an eminent degree, both art and science—who is required to study and understand the different dispositions and propensities of the children committed to his care—to whose culture is confided the embryo blossoms of the mind—who is carefully to watch their daily growth, and to aid and accelerate their expansion, so that they may yield rich fruit in beauty and abundance—in short who, in the incipient stage of its existence, is to attune the delicate and complicated chords of the human soul, in the moral and intellectual harmonies of social life; is it not equally apparent that such a mission cannot be worthily performed, without careful preparation?"

While there seems to have been a unanimity of opinion in Missouri in favor of establishing some seminary, or for making some provision to supply the wants of the State by competent teachers, we regret to find so much diversity of opinion as to the best means of accomplishing the object. Some have given a preference to a Normal school, organized upon the principles of the manual labor system; but the project that seems to have met with most favor, is to add a new professorship to the University, to give instruction in the "Theory and Practice of Teaching."

The manual labor system we think entirely out of the question, both from the amount it will take to put it in operation, and its doubtful success as an experiment. For some fifteen years manual labor schools have been the rage, yet out of the number established, scarcely one

in twenty has succeeded. We also deem the establishment of an additional professorship in the University as an impracticable experiment. First, because the experiment has been tried elsewhere and has not succeeded. Col. Young in the report above referred to, after an experience of nineteen years in the State of N. York, pronounces "the system to a great extent, to have been a failure." Secondly, we object to it, because even with the assurances of success, it would only furnish male teachers, as females could not, and would not, enter the University as students. Yet females, from their greater patience, better acquaintance with the wants, better apprehension of the instincts, and more familiarity with the habits of childhood, are the better qualified by nature, and the safest hands into which to commit the delicate task of the moral culture, and intellectual development of the younger portions of the growing generation. This also is the only profession which by our social organization is left open to females, and the only employment in which female labor can be turned to any account. Yet even here, her services yield her but little more than one-half what similar services yield males. Experience demonstrates the superiority of female over male educators wherever the experiment has been tried; so that in all States where there is a common school system the ratio of increase of female teachers over male teachers has been as five is to one. In Massachusetts, in the year 1837, the number of male teachers in the common schools was 2,370. The females 3,591. In 1845 the number of males 2,595, while the number of females was 4,700. Showing an increase in eight years of 225 of males and 1,109 females. The most gratifying fact connected with this is, that during that time the compensation of both male and female teachers had advanced—the former more than 16 per cent. and the latter more than 12 per cent. In 1846 the number of males was 2,595; females 4,997, showing an increase of 10 of the former and 297 of the latter. The Hon. Horace Mann, for so many years the devoted Secretary of the Board of Education of Massachusetts, in view of these facts, makes the following observation in his report of 1847:

"Hence it appears that the number of female teachers in our schools is now almost twice the number of males. The regularity of this increase shows the soundness and stability of the principle on which it is advancing. The Normal schools have contributed greatly to this most desirable result; and in this way alone—that is, by substituting the cheaper and better services of females—they have already saved the State a great portion of all the money they have cost. A *man* may keep a difficult school by means of authority and physical force; a *woman* can do it only by dignity of character, affection, and such a superiority in attainment as is too conspicuous to be questioned. It is the possession of the latter qualities which has enabled so many of our females to keep winter schools, and thus increase the relative number of female teachers to a degree so surprising."

We, therefore, seriously object to the proposed professorship in the University, for the reason that it would debar us from availing ourselves of the better and cheaper services of females. The latter of which is

matter of serious consideration, especially when putting a school system in operation in a new country.

We object to the same project upon other grounds; one of which is, that, for some time at least, even in the most populous portions, there will be vacations in the schools of from three to eight months. According to the practice adopted in the Normal schools, during the vacation, the teacher, who is aware of his deficiencies, enters the school, and studies his protession, until the season comes round to re-open the district school; and so, from time to time, until he has completed his professional studies. He would then supply the means of his own support while attending the State school, and would at once give evidence to the community of the benefits to be derived from the Normal school system. But, according to the other mode, he would enter the University and remain there for years, the State not only not deriving any benefit from the system, but the community be unfurnished with evidence to judge of the usefulness of the system. Moreover, the Normal school system places it within the reach of those of the humblest means, to qualify themselves for the profession of teaching. While that of the University could only be made available by those who either possessed abundant means or powerful and influential friends to aid them.

The next consideration is, what will it require to put a Normal school in operation? Massachusetts appropriates annually $2,000 for each of her Normal schools, three in number. New York appropriates $2,500 to each of her schools, four in number. We should suppose that $2,500 for the first two years, and $2,000 annually thereafter, would be sufficient. The first few years the expenses, as a matter of course, would be greater, on account of the outlay in scientific apparatus, library, &c., than afterwards. For the erection of the necessary buildings, we would rely upon the public spirit, enterprise, and liberality of our citizens; and we would locate the school at the place which shall furnish the greatest amount in money for the building, and a proper site for its location. To every Normal school there is attached what are called model schools, which are taught by the pupils, under the immediate supervision of the principal. Let a town, then, furnish a suitable building, say at a cost of ten or twelve thousand dollars, and it will have its four to five hundred children taught gratis, and in a superior manner to any in the State. This was the manner in which Massachusetts got her Normal schools established.

If there should be but one Normal school established, provision should be made to admit both male and female pupils. This is the case at the Bridgewater and Westfield Normal schools, in Massachusetts. But the school at West Newton is entirely devoted to educating female teachers.

It was our intention to give a detailed history of the rise, progress, results and present condition of the Normal schools wherever tried; and the results of experiments made by professorships in academies and colleges, and to show that the former have never been abandoned, but adopted when the academic and collegiate systems had exploded. Should it be deemed necessary, we will go over the whole ground here-

after. At present we will only remark that Normal schools originated in Germany more than one hundred years ago. The first one was established in Stettin, in Pomerania, in 1735, from whence they gradually spread, until they have been introduced into almost every country of Europe, embracing even the Czar of Russia and the Sultan of Turkey, as their patrons. In 1846 the Sultan appointed a Minister of Public Instruction, established a Normal school, and supplied it with teachers from western Europe. France, by law of 1833, established a Normal school in each of the eighty-six Departments into which France is divided. In 1837, M. Guizot, then Minister of Public Instruction, says, "there are eighty-three of these schools in full operation, forming in each Department a grand focus of light, scattering its rays in all directions among the people. Victor Cousin, while Minister of Public Instruction of France, in his report upon the education of Holland and Germany, which he visited officially in person, for the purpose of collecting information respecting their systems, says, "I attach the greatest importance to Normal schools, and consider that all future success in the education of the people depends upon them." So universal has been the favor with which they been received in Europe, that even Old England, as late as 1845, established two, one at Battersea, and one at Chelsea. Three years prior to that, to-wit, in 1842, Lord John Russell, as Primier, had been compelled to abandon the project, on account of the opposition the appropriation (£30,000) met with in the House of Lords.

There are three Normal schools in Scotland; and, in 1838, the National Board of Education for Ireland, founded a Normal school at Dublin. Spain and Italy have recently adopted them.

Another important matter, and directly bearing upon the legislation and administration of a school system, is the appointment of a Superintendent of Public Instruction. It will be conceded that a legislature cannot legislate understandingly or wisely upon any subject, unless it have every fact and data showing all the interests and bearings of the subject upon which it is called to legislate. In Missouri we have no school statistics, and can have none, unless the charge of collecting them is entrusted to a special officer. All that the law now requires is, that each county shall make return of its educable population to entitle it to its *pro rata* of the State School Fund. Nothing is known of the value and productiveness of local funds, nor the number of children attending school; nothing of the various wants of the districts in the State; nothing of the character of the schools, nor of the qualifications of the teachers; nothing of the difficulties the school committees encounter in organizing and sustaining the schools. And as these are not known, there are no counsel and suggestions given how to surmount or remove the difficulties; no plans of improvement suggested, either as to construction of school houses, furniture, apparatus, nor as to the mode of instruction; no defects in the law pointed out and remedies suggested. The legislature cannot act understandingly unless it know precisely what the condition of things is, and what is required to be done. Yet our school committee-men must be without aid, and left to struggle on with the difficulties that

surround them, unpitied and unsustained, because there is no source through which they can derive the necessary assistance, and the legislature cannot and will not act upon isolated cases. These and other clogs that are at present attached to, and weigh down our school system like an incubus, can only be removed by appointing a properly qualified person as superintendent of common schools. This fact is so obvious, that it has not escaped the attention of any person here or elsewhere, who has given any attention to the subject. In the Report of the Committee on Education, made by the Hon. W. Claude Jones, already referred to, it is recommended that the duties of superintendent of common schools be imposed upon the Normal professor, proposed to be added to the University. We do not believe that any professor of the University would have leisure enough to perform the duties that ought to devolve upon a superintendent; because, to do anything like justice to the subject, would require constant and unremitted labor; whereas, our professors have scarcely enough unoccupied time for taking the necessary recreation. No doubt a Normal professor could give much valuable information, and suggest many useful hints relative to putting a school system in operation, or improving it when established. But we see no good reason, on this account, to saddle him with duties, responsibilities and labors which are foreign to such knowledge. A worthy superintendent ought to avail himself of all knowledge within his reach, in relation to the practical operation, improvement, and management of a school system; and therefore, would, with proper deference, avail himself of all the information the Normal professor, or any other person may possess. But we doubt of the practicability of making the Normal professor superintendent of public instruction. It matters not how conscientious and impartial he might administer the duties of the office, the cry of favoritism would soon be raised against him by those who are not graduates of his school.

We might quote extensively from documents emanating from the different departments of the State government of our own and other States, urging a separation of the office of Superintendent of Public Instruction, from the duties of any officer charged with other duties, and organizing a separate department under the control of a special officer, but we must forbear, as it would extend the limits of this article, already sufficiently long, beyond what we originally designed. We cannot, however, refrain from quoting the following extract from the report of the Hon. T. Campbell, late Secretary of State and Superintendent of Public Instruction of Illinois, as it is forcibly expressed and directly to the point:

"The practical operation of any school law in our own State, is yet to be tried. Notwithstanding our statute book has been encumbered with school laws, no one has ever been carried into vigorous and efficient operation; and our people were, at the time the present law was enacted, as inexperienced in all the details necessary for the successful administration of the law, as if the question had been presented to them for the first time.

"The legislature which enacted the present law, would appear to

have been influenced more by a feeling of economy than true wisdom. It appears to have been forgotten that the great desideratum of every such law should be, to combine efficiency with economy. I would beg leave to state, that when the legislature imposed the duties of superintendent on the office of the Secretary of State, it did it for the avowed purpose of avoiding the expense of employing a superintendent whose duty it should be to attend solely to the subject. The business of the Secretary's office was sufficiently laborious to require all his time and attention; and if he faithfully discharged all the duties imposed on the Superintendent of Common Schools, he must neglect those incumbent on him as Secretary of State. This the framers of the law could not have expected."

Again: after adverting to the facts that in the Eastern States, formerly the Secretary of State, or some other officer, was ex-officio Superintendent of Common Schools, and the result of that connection, Mr. Campbell proceeds:

"It was soon discovered, that to carry the law into practical and efficient operation, it would require all the time of the most active, zealous and talented officer. Memorials were addressed to the legislature setting forth in the strongest terms, the absolute necessity of having a State Superintendent appointed, with a salary adequate to the labor and responsibility of his office. The legislature, listening to the voice of reason and experience, created the office of State Superintendent, and defined his duties by law. The beneficial results were soon to be seen in the improved condition and rapid progress of their schools."

After adverting to the means the Superintendent must employ to awaken parents, teachers and officers to a sense of the importance of the subject, and excite them to activity in putting the law into efficient operation, Mr. Campbell adds:

"It is the want of information on the subject of popular education that is the cause of the painful apathy which prevails amongst the people; a want of knowledge of the progress our sister States have made, and the means by which they have been enabled to carry their different systems into practical and successful operation.

"In Prussia, where common schools have received the greatest attention, and where the government has used every means in its power to mature a system, the benefits of which might reach the humblest subject, talented and learned men have been despatched to other countries, where common schools were supposed to have arrived at the highest degree of perfection, for the purpose of collecting information, and obtaining knowledge of the different systems. Elaborate reports have been compiled from these beneficial sources of information, and widely circulated amongst the people. This has produced not only a general and enthusiastic action on public sentiment, but has caused wise modifications, and great improvements to be made in their school laws."

In order to make any school system effective, particular care must be taken in the organization of the machinery by which it is to be put,

and sustained in operation. To give it an efficient head, is certainly a consideration of the first importance; but the head alone does not suffice—there must be other members whose functions, although not so conspicuous, must give the head vitality and the power to think and act. In the organization of a school system, its executives must extend to every district and neighborhood within the limits of the State, so that the system will be as all-pervading and active throughout its borders, as the nervous system in the human body. A school system that is less than this, is a mere apology for a system. One man, or a thousand, working isolated and alone, without concert, and often without knowledge, can never accomplish what is desired. The following is our plan for a detailed organization of a school system:

The local school funds, such as township, county, &c., funds, are now managed by the county court. We would recommend that a court of school commissioners be organized in each county, and that the duties of managing the school fund be taken from the county court, and entrusted to the court of commissioners. This court we propose to be constituted of the presidents or chairmen of the boards of directors or trustees, of the different school corporations or districts, in each county. That upon assembling at the court house, they elect a president of the court of commissioners, who shall hold his office until the next biennial election, and who shall be county superintendent of public schools. That at the next biennial election, a county superintendent for each county be elected by the people of the respective counties, who shall hold his office for two years, and until his successor is elected and qualified.

The members of the court of commissioners to be paid one dollar per day, by the county, the same as county judges now are, and the president thereof two dollars for every day they shall hold a session. That the members of the respective districts be required to furnish annually, at a specified time, the number of children of educable age within their district, &c.; the number who have attended school during the year; the average attendance; the length of the term that the school or schools were kept; the grade of studies pursued; the amount of money expended; the resources from which it was derived; with all such other information as may be of service to be known, to provide for the educational wants of the State. That an abstract of all such reports from the different districts, be made out and signed by the County Superintendent, and transmitted to the State Superintendent.

Should this plan be adopted, more than one thousand men would be immediately enlisted in the cause of public instruction, and to act in concert in the great cause. These men, from the fact that the people have selected them to take charge of educational matters, it is presumable, are those who are, and have been, most prominent in promoting schools in their respective neighborhoods; and if so, are the safest and best depositories of the trust, to put into vigorous operation a general system of education. We invite particular attention to this, impressed as we are with its importance. For depend upon it, a system however perfect in detail or provident in means, must and will fail, if its administration is confided to lukewarm and indifferent hands.

Those who will have its administration, cannot expect always to sail upon a calm, summer sea, with a favorable breeze. No—storms, in this as in every thing else, will arise, and tempests beat which will make the mercenary quail and flee. Commit, then, the ship to those of strong hands and brave hearts, who have faith in God and man, and if human skill can save it, it will make the port in safety.

There are two other subjects intimately connected with a school system, which we had hoped our limits would permit to dwell upon at some length, viz: Teachers' Institutes and District Libraries. We will only advert to them briefly, and then close for the present. Teachers' Institutes, are intended for those teachers, who have not had the advantage of studying their profession systematically, and who cannot spare the time to attend the Normal schools. The way of proceeding is somewhat on this wise: There is a small appropriation placed at the disposal of the General Superintendent, say for the meeting of one Teachers' Institute, two hundred and fifty dollars. The Superintendent gives notice that at a certain time, an institute will assemble at such place as shall be designated by the largest number of teachers. The point having been designated, notice is given of the time and place of meeting. With the means placed in his hands, the Superintendent procures the services of the most eminent teachers and lecturers on the science of teaching, to attend the meeting of said institute, where from ten to twenty days, the teachers assembled are drilled and instructed in the various branches taught in the schools, and the manner of teaching them, and lectures delivered upon school government, and every thing relating to schools. These institutes have been found an efficient means of improving the qualifications of teachers, and the character of the schools, in the States where they have been tried. It must be evident that Normal schools cannot immediately supply all the wants of the States; therefore, institutes, to a certain extent, make up for former deficiencies.

District libraries are established in every school district, in several of the States. They are of the highest utility for the general diffusion of knowledge among all classes, and bring intellectual culture within the reach of every age, sex, and condition, however limited their means, or defective their education. Many that can, and would read, are denied the luxury of a book, by their poverty; others, for want of better information, procure books that not only contain no useful information, but are positively injurious, sapping the very foundations of virtue and morality. But, in the district school library are to be found not only good books, but every variety of them, filled with information that is useful in every pursuit and condition of life. They generally embrace ancient and modern history, biographies, voyages and travels, natural philosophy and history, the arts and sciences, generally, essays, &c. In fact, just such works as ought to be in the hands of every citizen of this wide-spreading Republic. Massachusetts and New York annually make large appropriations from their State Treasurys, for the establishment and enlargement of district libraries. Massachusetts gives $15 out of the State Treasury, to each district that raises a similar amount. New York appropriates $55,000 annually, upon condi-

tion that the districts raise a similar amount by taxation. In Michigan and Wisconsin, the same system prevails.

We have now given what we believe to be a practicable plan for organizing and supporting a school system in Missouri. We do not claim that it is perfect, nor do we claim much originality for it. Most of what we propose has, in some form or other, occupied the attention of the Legislature for years, as all who are familiar with our Legislative history, know. We owe many suggestions to the Executive and Legislative documents that have emanated from the different departments for the last four and six years. We could not always give credit to the proper source, from whence we derived them, nor assign the reasons for selecting them, and rejecting others, of which they formed a part, and with whom they were inwoven in a system. While, therefore, none will find their own system entire, we hope they will find enough of it to secure their approbation and support. We have endeavored to select from all systems what we found had been tried and been successful elsewhere, and to discard what has been untried, or tried and failed in other States. We do not say that such failure is a final verdict against any measure, and that the result would be the same, tried under a variety of, and different, circumstances. But, for the present, we think it safe to commence nothing, but what we have the assurance can and will be carried through. In the incipiency of any enterprise, a failure is, in most cases, fatal; or, if not, it deals a blow, from which recovery is slow and often doubtful. Precedents, in such cases, and especially in the one under consideration, wherein we have so many and such brilliant ones, is not only safest, but most prudent. When we have established a system, and it has acquired strength and stability, and requires room for development and expansion, then it will be time enough for trying experiments.

In conclusion, we do not feel that we have done, or can do, justice to the great subject to which we have called public attention. And we regret that a subject of such great and paramount importance, has not fallen into hands qualified to treat it worthily. Confident that public opinion is ripe for, and demands the establishment of, a system of public instruction, and encouraged by the friends of the cause, we could not refrain from adding our mite to aid in the great object. It is now left with those into whose hands the people have committed the legislative power for the time being, to say whether public expectation in respect to this matter, shall be met, or whether it shall be again deferred, and the growing generation in Missouri be deprived of advantages which are now enjoyed by the young, almost in every sister State. Will Missouri be so blind to her interest, and so reckless of her political character, as not to move in this great and vital matter, until forced by public opinion elsewhere? As it is, she will be among the last; let her, at least, take precedence of the rest among the tardy. Intelligence is the foundation and superstructure of our political edifice; and upon the continued intelligence of the people, depends its permanence and stability. It is an axiom of our political creed, that the nation has a right to demand the services of its citizens in the camp, in the courts of justice, in its halls of legislation, and in its executive

chairs. If the government have a right to demand these services, then it is the duty of the citizens to render them. If the citizen owes them, then it is the duty of the government to qualify him to discharge them. Hence we derive the obligation of society to educate its members; and every society that does not do so, is false to its mission, and derelict to its duty, and loses its right to punish the guilty, or command the virtuous and intelligent. Sins, in this world, are not confined to individual transgressions; there are also social sins—and the last we look upon with more abhorrence than the former. Individual transgression springs from individual depravity, but social iniquity springs from the vitiated moral sense and depravity of a whole community, and are more deleterious in their effect. The discharge of all social obligations, is the first step towards the perfection of the individual. Religion, morals, patriotism, the entire concerns and interests of humanity, present and to come, then enjoin it as a sacred duty and obligation, to cultivate the mind, the rational part of man, upon whose action all of these depend for their benign and beneficient effect, in ameliorating and improving the condition of man here and hereafter. Awful responsibilities rest somewhere; let not selfishness and paltry interest blind the eyes of those upon whom it rests, so that they may not see, or appear not to see, and discharge them.

[To the able and elaborate researches of the author of the foregoing article, we wish to add the following extract from the Constitution and Laws of Louisiana: The Constitution of that State provides that "there shall be a superintendent of public education, to hold his office for two years. Free public schools shall be established throughout the State; the proceeds of land granted for the purpose, and of lands escheated to the State, shall be held as a permanent fund, on which six per cent. interest shall be paid by the State, for the support of these schools."

The law of 1847 imposes a direct tax of one mill per dollar upon all taxable property in the State, and appropriates the entire poll tax collected to school purposes.—Editors.]

ART. V.—THE IMPROVEMENT OF TIME.

How shall the people of the west dispose of their surplus time? We have shown elsewhere that there is neither a home nor a foreign demand for a large portion of our surplus products;* but we conclude that the case is quite different in regard to our surplus time. For this commodity there is a home market—one that is in no danger of being affected by foreign competition, nor depressed by over production. As such a market cannot be otherwise than interesting, especially to our

*Vide Volume I, page 579.

agricultural readers, we propose to discuss, briefly, the nature and extent of the demand, and also the principles upon which it is based.

The time that remains to an individual after he has provided the common necessaries and comforts of life, may be regarded as so much wealth, in the best sense of the term ; for, unless accumulated wealth serves to relieve the possessor from labor and anxiety, so as to afford time to cultivate and improve his mental and moral condition, it is a useless incumbrance to the owner, and of little benefit to society,

The fertile soil and genial climate of the west, enable the agriculturalists of this region to spare more time from labor, than can those of any other ; and hence, they ought to be, and doubtless are, more wealthy than any class of individuals that constitute as large a portion of the population of any other country. But like the young and inexperienced heirs of a rich parent, they appear to have no just conceptions of either its use or value, and are guilty not only of making a misapplication of their surplus time, but of their labor also. For, while they produce a redundancy of the leading staples, they are destitute of many comforts ; and are total strangers to many luxuries that might be produced by a small portion of the labor that is improvidently thrown away in the production of articles that never find a remunerating market.

We cannot suppose that any of the subjects that we design touching are new to our agricultural readers, or indeed that they have not already made more or less progress towards the attainment of the ends which we propose. But we shall aim to place some of these topics in a light in which they are not generally viewed, with a hope that we may arrest the attention and excite a new interest in the minds of such as have hitherto regarded them with indifference.

One of the principal constituents of a comfortable state of existence, is health—and a portion of the surplus time and labor of the farmer could not be better employed than in removing, and guarding against the causes of disease. The drainage of ponds, and wet or marshy grounds, in or near the farm, and the improvement of the beds or channels of small water courses, would, in our opinion, prevent most of the diseases that afflict the people of this region. We leave it to those who have suffered from the fevers and agues of this country, to estimate, if they can, the value of such improvements ; simply suggesting, however, that in addition to the value of time lost, physicians' bills and bodily suffering, they should take into consideration also, the anxiety and mental suffering which pervades a whole family, and not unfrequently a neighborhood, in consequence of the sickness or death of one individual. In this climate, comfortable dwellings are also necessary to health, and much yet remains to be done in this department of labor.

The erection of substantial barns, stables, and shelters for every description of stock, likewise demand a portion of the surplus time and labor of the farmer. This is a department of agricultural economy that involves other considerations than those of pecuniary advantage. Such improvements are calculated to give quiet and repose to the owner, and enable him to estimate with more certainty the value

and profits of his operations, while they protect him against the innumerable vexatious accidents that annoy those who neglect to make such provision. The petty annoyances which continually arise from the want of a well regulated establishment, are calculated to impair the temper, and mar the happiness of individuals—to make them unkind in their families, and disagreeable to their neighbors. And one that can look with indifference upon his stock, shivering in the cold rain and sleet of winter, will, in time, cease to sympathise with human suffering also. A righteous man regardeth the life of his beast;† and we may safely conclude that one who treats his stock with cruelty, is destitute of those amiable traits of humanity, which are necessary to make him a good member of society.

Another portion of this surplus time might be profitably appropriated to the improvement of the soil. This, however, would tend, in time, to diminish rather than enlarge the amount of labor required for agricultural purposes. The population of the earth can be sustained to its present extent in numbers, only by the preservation and improvement of the soil; and one who destroys the fertile properties of his land until it can no longer sustain the laborer that digs and plants it, wrongs mankind, and sins against the providence of the Creator. The provision made by nature for the support of man in a state of civilization, can be appropriated and made available only by the observance of laws that are certain and irrevocable; and hence, it is self-evident, that civilization must advance or recede according to the degree of obedience yielded by man to their requirements.

We are aware that some individuals have grown rich by exhausting their lands; but this occurred in districts where land was abundant and cheap. Such a result could never happen in populous districts, where a system of improvement prevailed; for here the money made by exhausting the soil would not be sufficient to purchase an equal quantity of improved land.

But be this as it may, it is obvious that every acre that is destroyed or rendered less productive, diminishes the capacity of a country to sustain its inhabitants, and if the deterioration of the soil of a state or district should continue at the rate of one per cent. per annum through a succession of years, it would not be long before the increase of population would be entirely checked, and famine ensue, unless relieved by emigration, or by a resort to the production of manufactured articles, to be exchanged with other countries for bread. As evidence of the truth of this proposition, and of the importance of sustaining and improving the soil, we will point to a region that was originally the garden of this broad continent—one possessing a climate adapted to the development of the highest state of civilization, and a soil of matchless fertility; its border washed by the ocean, and affording bays and harbors, safe and sufficient to accommodate a boundless commerce—watered by noble rivers and beautiful streamlets—rich in mineral wealth—and adorned by scenery grand and beautiful, calculated to elevate and refine the most sordid nature; and withal, giving birth to heroes and sages, whose names stand unrivalled

†Prov. xii, 10.

in the pages of history. Such was this region within the memory of individuals who yet survive. But not appreciating these advantages, and blind in regard to their true interest, the inhabitants laid waste the forest, and subjected the soil to an improvident and destructive system of cultivation, extracting from it the essential principles of fertility, through a continued succession of years, and exporting them in the form of grain and other products, to foreign countries, until in time, a state of sterility ensued, that rendered the land unprofitable for cultivation. Thus despoiled of its beauty, and its strength wasted by the fathers, their offspring were driven forth from the home of their birth, and the graves of their ancestors, to seek the means of subsistence in the unbroken forests and the uncultivated plains of the south and west—regions not yet rifled of their wealth, but lacking many of the advantages originally pertaining to the one thus ruined, and, in part, made desolate. And so powerful were the causes acting upon the inhabitants of this region, that in one period of ten years, thirty per cent. of its population migrated to other lands.‡ Yet, so blind is man to the true cause of the calamities which afflict his race, and so slow is he to learn wisdom, even from the experience of the past, that many of these individuals are pursuing, in the south and west, the same system of destruction that drove them from the east. Let them read the future in the past; and bear in mind that like causes must every where produce similar effects.

The cultivation of orchards, vinyards, gardens, and ornamental trees, also require a portion of the surplus labor and time of the people of the west. These pursuits, though not without pecuniary profit, are to be considered chiefly with regard to the luxuries which they afford, and the moral influence which they are calculated to exert over those who engage in them. When the commodities necessary for the comfort and convenience of our corporeal nature have been provided, to a reasonable extent, a further accumulation adds nothing to our physical enjoyments. Were it otherwise, and did our capacity of physical enjoyment enlarge with the means of gratification, man would look to this as the only source of happiness, and totally neglect the means of mental and moral improvement. Hence, it was ordained, that after the wants of his physical nature should be supplied, the time, if any remained, should be appropriated to intellectual improvement, moral culture, and the gratification of moral desires. These pursuits lead into a boundless field of employment, where competition serves but to increase the demand for labor, and where gratification enlarges the capacity of enjoyment. And these are the pursuits which we desire to commend to all who have time to devote to them. We shall leave, for the present, our readers to determine what portion of their time they will devote to intellectual improvement, and confine our observations, in the conclusion of this article, to the philosophy involved in cultivating a taste for the "beautiful."

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‡The increase of population in Virginia and the Carolinas, from 1830 to 1840, was but a small fraction over two per cent.—more than thirty per cent. less than the average increase of the whole United States in the same period.—[Eds.

Although the gratification of moral desires is not necessary to the existence of the individual, yet it may be affirmed that the happiness of man is limited and determined by the degree of his moral attainments, and that the one bears a fixed and certain relation to the other.

Man possesses the faculty of receiving pleasure from the observation of certain forms and properties of matter denominated "beautiful." This faculty is an inherent property of his nature—the source of desires that demand gratification; but the desires, emanating from the wants of his physical nature, being more vehement and urgent, obtain precedence, and often predominate so far as to suppress, and almost extinguish the desires of his moral nature. This sense of beauty is a source of moral action, and was designed to harmonize the feelings and affections of man with the laws and economy of nature.

The emotions of beauty are pleasing, social, moral, and during their continuance chasten the imagination, and exclude all selfish and vicious desires; for when our feelings and affections are brought into harmony with nature, every evil propensity must cease to exist. One who is a stranger to these emotions, lacks an essential test of moral truth, and possesses no better guide for his actions, than selfish and heartless expediency.

> "The man that hath no music in himself,
> Nor is not mov'd with concord of sweet sounds,
> Is fit for treasons, stratagems, and spoils:
> The motions of his spirit are dull as night,
> And his affections dark as Erebus:
> Let no such man be trusted."

And what is music else but beauty—"the concord of sweet sounds?" And although the emotions which it excites may be more vivid than those produced by natural objects, yet they are not so purely moral, and therefore less to be trusted. The former are mingled with human passions, and may incite to error—while the latter, emanating from the pure fountain of nature, must always be true, and lead to virtue. Behold! all nature is arrayed in beauty; but man is not permitted to enjoy the highest delight that the emotions of beauty were designed to impart, without combining his own labor with the works of nature.

We read that, out of the ground made the Lord God to grow every tree that is pleasant to the sight, and good for food. Here was ample provision made for both moral pleasure and physical comfort; but man was not permitted, even in the Garden of Eden, to enjoy these blessings without a price—for we read also, that, he was put into the garden to dress it, and to keep it. The earth was in its primal state—it was not yet encumbered with the thorn and the thistle—the trees grew without culture—but they required the hand of a man to dress them, and God saw that it was good. And who ever planted and pruned a tree that delighted not more in this, than in all the trees of the wood? It may be that in the eyes of others, many trees were more goodly, but this was reared by his own hand—he pruned and dressed it—watched the swelling bud—the tender germ—the opening flower—the

broad spreading foliage, and the ripening fruit; and he almost deemed it a thing of his own creation, for it was planted and fashioned by his own hand. The birds came and nestled in its bosom, and sung sweetly on its branches—his children disported in its shade, and plucked from its bending boughs the blushing fruit; and more than all, his pleasurable emotions were reflected the while from a heart that beat responsive to his own. Is there aught else in all that wealth can purchase or station give, that can excite emotions more refined, or fill the heart with bliss more pure?

The forest and wild flower are things of beauty, and it is sweet to roam beneath the broad shade of the wide-spreading oak—to listen to the song of birds, and "inhale sweet odors from the breath of flowers;" but these owe nothing of their beauty, or being to our care. We neither planted, pruned nor dressed them; and hence, the emotions which they excite, though pure and pleasurable, are not enriched by a consciousness of duty performed, nor mingled with the affections of those for whom we live and delight to labor.

RAILROAD, CANAL AND STEAMBOAT STATISTICS.

[The following statistics have been selected with reference to the leading subject of the present number. This is an arrangement that we shall hereafter endeavor to observe, as it will, in our opinion, be found more convenient to our readers, than if the statistics bore no relation to the other matter contained in the number.—EDITORS.]

RATE OF RAILROAD FREIGHT AND FARES ON SIXTY-EIGHT RAILROADS IN THE UNITED STATES.

The American Railroad Journal furnishes the following statement of the rates of fare and freight on sixty-eight American roads. It will be found exceedingly convenient for merchants and others.

Eastern Railroad, Boston to Portland, 105 miles—freights on groceries, grain, iron, butter, and dry-goods, $3 55 through, or 3.4 cents per mile; light and bulky articles, $5 through, or 4.76 cents per ton per mile; fare, $3 through, or 2.85 cents per mile.

Boston and Maine Road, Boston to South Berwick, 72 miles—freight, salt, sugar, groceries, iron, and coal, $1 76, or 2.14 per ton per mile; light and bulky articles, $2 88, or 3.5 per ton per mile; one horse, $3 62; two horses, $5 43; one horse carriage, $2 71; two horse carriage, $3 62; four horse carriage, $5 43; fare, $1 62 through, or 2.25 per mile.

Lowell Railroad, 26 miles—merchandise, generally, $1 25 per 2,000 lbs.; by cargo through, $1 10; passenger fare, 56 cents, or 2.15 cents per mile.

Nashua and Lowell, 15 miles—freight generally, $1 per ton; horses $1; one horse coaches, $1; passenger fare 40 cents, or 2.66 cents per mile.

Concord Road, Nashua to Concord, 34 miles—freight is divided into 1st and 2d class, and is charged about 4 cents and 3½ cents per ton per mile, or $3 and $2 50 through to Boston, 75 miles, and lumber 75 cents per 1,000, and hard wood $2 75 per cord; pine wood, $2 25 through; horses, one, $3 25; two or more at $2 50 each; two horse carriage, $2 50; fare, 80 cents, or 2.35 per mile.

Worcester Railroad, 44 miles—coal, iron, lumber, etc., 4 cents; heavy merchandise, such as sugar, salt, butter, etc., about 6 cents; groceries and dry-goods, 6 to 8 cents; light and bulky merchandise, 6 to 10 cents per ton per mile; passenger fare, $1 25, or 2.8 cents per mile.

Boston and Providence Railroad, 42 miles—coal, iron, grain, and merchandise generally, from 5 to 7½ cents per ton per mile; horses, $4; carriages, $3 to $4; passenger fare, $1 25, or 2.97 cents per mile.

Stonington Road, from Providence to Stonington, 47¾ miles—corn, grain, iron, coal, sugar, salt, and dry lumber, $2; butter, dry goods, and bulky articles, $2 80 per ton; one horse, $3; stage coach, or large carriage, 6½ cents per mile; fare, $1 50, or 3.1 cents per mile.

Boston and New York, via. Providence and Stonington, 216 miles—freight, measurement goods, 7 cents per cubic foot; by weight, 30 cents per 100 pounds; passenger fare, $5, or 2.3 per mile.

Boston to New York, via. Fall River, 223 miles—freight, 7 cents per cubic foot, and 30 cents per 100 pounds; passenger fare, $5, or 2.24 cents per mile.

Fall River Railroad, 53 miles—coal, iron, and grain, $2, and sugar, salt, groceries, butter, and dry goods, $2 50 per ton; light and bulky articles, charged by measurement, 140 cubic feet to the ton; passenger fare, $1 35, or 2.54 per mile.

Boston and New York, via. Norwich—freight as on the other through lines; fare through, $5—and if a passenger wishes to stop over a day on the way, he can do so by applying to the agent in New York or Boston.

Norwich and Worcester Road, 60 miles—we have not got the rates of freight; fare, $1 50, or 2.5 cents per mile.

Old Colony Road, Boston to Plymouth, 37 miles—freight generally, 4½ cents per ton per mile; light and bulky articles, 140 feet to the ton; passenger fare, $1, or 2.66 cents per mile.

Connecticut River Road, from Springfield to Greenfield, 36 miles—freight, iron, coal, manure, lumber, grain, sugar, butter, and salt, $2; dry goods and groceries, $2 40 per ton through; fare, $1 10, or 3 cents per mile.

Providence and Worcester Road, 43½ miles—freight, groceries, dry goods, grain, sugar, salt, butter, iron, coal, manure, and lumber, $3 for 2,000 pounds; bulky articles, 15 cents per 100 pounds through;

fares, 1st class, $1 25; 2d class, 85 cents, or 2.84 and 1.9 cents per mile.

Boston and Fitchburgh, Boston to Fitchburgh, 50 miles—freight, all heavy articles, as butter, salt, sugar, groceries and dry-goods, through per ton $2, or 4 cents per ton per mile; light and bulky, 4 cents per ton of 150 cubic feet per mile; horses, at 1 ton each, or 4 cents per mile, or $2 each; carriages, one horse, $1; two horse, $2, each through; fare through, $1 25, or 2.5 cents per mile.

Western Railroad, Worcester to Albany, 156 miles—freight, sugar, salt, butter, grain, iron, coal, lumber, and groceries, $4 per ton of 2,000 pounds, or 2.56 per ton per mile; dry goods and bulky articles $7 per ton of 2,000 pounds through, or 4.44 per ton per mile; one horse, $10 50; two horses, $12 25; three horses, $14, at the risk of the owners; one horse carriage through, $12 23; two horse carriage, $15 75; stage coach, or omnibus, $28, at the risk of the company; fare through, $4 25, or 2.72 cents per mile. The fare through from Boston to Albany, is, we believe, $5, or 2.5 cents per mile.

New Haven and Springfield Railroad, 62 miles—coal, iron, manure, lumber, sugar, salt, etc., $2 60, or 4.2 cents per ton per mile; groceries and dry goods, $3 50; grain, $5 20 per ton; passenger fare, $1 87, or 3 cents per mile.

Bridgeport, 98 miles—coal, iron, and marble, $3 per ton; sugar, salt, butter, $3 20; dry goods, $4; grain, 7 cents per bushel, through; horses and cattle, $3 50 each; two horse carriage, $5 25; passenger fare, $2, or 2.04 cents per mile.

New York and Harlem Railroad, 53 miles—coal, $2 per ton; iron, sugar, etc., 18 cents per 100 pounds; heavy merchandise, $3 50, and light $4 per ton; lumber, $3 50 per 1,000 feet; horses and cattle, $3 50 each; passenger fare, $1, or 1.88 cents per mile.

New York and Erie Railroad, New York to Port Jervis, 100 miles—25 miles by steamboat—freight to Otisville, 87 miles, coal $2 20; iron $42; heavy articles, such as grain, sugar, salt, butter, etc., etc., $3 50 to $4; groceries, $4 50; one horse carriage, $3; two horse, $4 50. We are not able now to give the rates charged upon *milk, fruits, vegetables, etc.*, on this line, but they are exceedingly low, and *morning* and *evening* trains are run *expressly* for such freight. We have not obtained the rates for the current year, since the road was opened to Port Jervis.

Patterson Road, 16½ miles—freights average about $2 50 per ton, delivered by the company; fare, 50 cents, or 3 cents per mile.

Morris and Essex Road, 32½ miles—freight, coal, iron, and manure, $2 25 per ton; corn and grain, 8½ cents per bushel; lumber, $3 per 1,000 feet; flour, 25 cents per barrel; fare, $1, or 3 cents per mile.

New York to Philadelphia, via New Brunswick and Trenton, 90 miles. This line is owned by *three* distinct companies, and managed by *two*. The *through* fare is $4, or 4.44 cents per mile—while the *way* fare, or *from place to place*, is only $2 25, or 2.5 cents per mile, as follows:—From New York to New Brunswick, 31 miles, 75 cents; from thence to South Trenton, 29 miles, 75 cents; and from thence to Philadelphia, 30 miles, 75 cents. This is what the people of those places pay, and what others pay, if they *wait over, at each place, for*

the next train; but if they pay *through*, from either end, it is four dollars. Yet *many have*, and *more will*, probably, hereafter pay *three times*, or from place to place, and go directly through, by the same train, for $2 25 to 2 75—while the stranger, or *uninitiated*, pay four dollars in the same car—or they *may* do so if they will. This line carries *little* through freight.

New York to Philadelphia, via Camden and Amboy, 88 miles. This line is owned by one company, and is partly by railroad and partly by steamboats—the fare through is $3, or 3.4 cents per mile. Freight, *legal* rates, fixed in their charter, 8 *cents per ton per mile*, or 32 cents per 100 pounds, or $7 20 *per ton*, through. The company have, however, exacted various prices, from 30 cents to $1 00 per 100 pounds, or from $7 to 22 40 per ton.

Reading Railroad, 92 miles—coal, $1 50 per 2,000 pounds; bituminous coal, iron ore, $2 10; pig iron and timber $2 50; bar iron, flour, grain, fish, and tobacco, $2 90; groceries and hardware, $4 25; dry-goods and furniture, $5 25; one horse, $6, and carriage per agreement; passenger fare, $3 50, or 3.8 cents per mile.

Philadelphia and Columbia Road, 82 miles—the freighting is done by private individuals at about 25 cents per 100 pounds; passenger fare $2 88, or 3.5 cents per mile.

Lancaster and Harrisburg, 36 miles—passenger fares $1 50, or 4.1 cents per mile.

Harrisburg and Chambersburg, fifty-six miles—coal, iron, manure, $1 50; lumber, corn, grain, $1 78; sugar, salt, butter, groceries, dry goods, $2 per ton through; passenger fare $2 12, or 3.78 cents per mile.

Philadelphia, Wilmington and Baltimore, 97 miles—freight 50 cts. per 100 pounds through; passengers, $3, or 3.1 cents per mile. This road carries very little through freight.

Baltimore and Susquehanna, 71 miles—coal, $1 37½; iron, $1 84; corn and grain, $2 20; salt and butter, $2; groceries, sugar, and dry goods, $2 50 per ton through; horses, $3 75, and four wheeled carriages $3 37 each; passenger fare, $2 12, or 3 cents per mile.

Baltimore and Ohio, 179 miles—coal, $2 75; iron, in open cars, $3 50; coffee, 25, dry goods, 35 cents per 100 pounds through; passenger fare $7, or 3.91 cents per mile.

Baltimore and Washington, 40 miles—coal, iron and grain, 4 cents per ton per mile; sugar, butter, salt, dry goods, light and bulky merchandize, $2 30 per ton through; horse, or *horse and wagon*, $5 75; passenger fare, $1 80, or 4.5 cents per mile.

Winchester and Potomac, 32 miles—coal, $1; iron $1 75 per ton; flour 18 cents per barrel; grain, 10½ per 100; sugar, dry goods, and light bulky articles, 14 cents per 100 pounds; horses $2 50 each; four wheeled carriages, $4 50 to 7 50; fare, $2 or 6.25 cents per mile.

Louisa Road, 50 miles—iron, $1 66; lumber $3 per 1,000; corn and grain, 14 cents per 100; sugar, salt, butter, 20 cents, and dry goods, 22 cts. per 100 pounds; horses, $4 66; four wheeled carriages, $4 50 each; light articles $4 per ton; fare $2 50, or 5 cents per mile.

Richmond, Virginia, to Washington City, 133 miles—iron, 2 cents per ton per mile; sugar, salt, butter, groceries and dry goods, ½ cent

per cwt. per mile; bulky articles, 8 cents per cubic foot to Fredericksburg; horses, 6 cents per mile; four wheeled carriages, 11 cents per mile; passenger fare, $5 50, or 4.13 per mile.

Richmond and Petersburg, 22½ miles—sugar, salt, butter, ½ cent per 100 pounds per mile; groceries and dry goods, ¾ cents per 100 pounds per mile; passenger fare, one dollar, or 4.34 cents per mile.

Petersburg to Welden, 63 miles—lumber $5 per 1,000 feet; corn and grain 6¼ to 8½ cents per bushel; salt, sugar, and butter, 25 cents per 100 pounds; horses and carriages, $3 each through; passenger fare, $3, or 4.76 cents per mile; second class, $1 50, or 2.38 cents per mile.

Gaston and Raleigh, 87 miles—lumber $7 per M.; corn and grain, 10 cents per bushel; sugar, salt, and butter, 35 cents; groceries, 55 cents per 100 pounds; light and bulky articles, 10 cents per cubic foot; horses, $4 20; carriages, $7 to 8 50; passenger fare, four dollars, or 4.6 cents per mile.

Wilmington and Welden, 161½ miles—corn and grain, 10 cents per bushel for 80 miles, 12 cents through; sugar, salt, and butter, 38 cts., and dry goods, 80 cents per 100 pounds through; horses $8; carriages, $10 through passenger fare, $6 50, or 4 cents per mile.

South Carolina, 136 miles—iron, 25 cents per 100 pounds; corn and grain, 7 cents per bushel; sugar, salt, butter, 25 cents per 100 pounds; light bulky merchandise, 8 cents per cubic foot through; horses, each, $8; four wheel carriages, $10 through; passenger fare, 1st class, $6 75, or 4.97 cents per mile.

Columbia, 68 miles—coal, iron, and manure, 25 cents per 100 pounds; corn and grain, 7 cents per bushel; sugar, salt, and butter, 25 cents; dry-goods, 35 cents per 100 pounds; light bulky merchandise 8 cents per cubic foot through; horses, $8 each; four wheel carriages, $10; two wheel carriages, $6 through; passenger fare, $3 38, or 4.97 cents per mile.

Georgia, 171 miles—iron, 15 cents per 100 pounds; corn and grain, 8 cents per bushel; sugar, salt, and butter, 30 cents, dry goods 60 cents per 100 pounds; light and bulky articles, 10 cents per cubic foot through; horses, $8; four wheel carriages, $10; passenger fare, $7, or 4.09 cents per mile.

Western and Atlantic, 100 miles—iron, 15 cents; sugar, salt, and butter, 25 cents; dry-goods, 40 cents per 100 pounds; grain, 8 cents per bushel; bulky merchandise, 8 cents per cubic foot through; horses $5; two wheel carriages, $3; four wheel, $6; passenger fare, $5, or 5 cents per mile.

Central, 191 miles—iron, 30 cents; salt, sugar, and butter, 40 cents per 100 pounds; corn, 12 cents per bushel; light bulky articles, 13 cents per cubic foot through; one horse, $10; four, or more, at $5 each; four wheel carriage, $10; passenger fare, $7, or 3.65 cents per mile.

Macon and Western, 101 miles—iron, sugar, salt, and butter, 25 cents, dry-goods 44 cents per 100 pounds; grain, 8 cents per bushel; light bulky merchandise, 9 cents per cubic foot through; one horse, $8; four, at $4 each; four wheel carriage, $8; passenger fare, $4, or 3.96 cents per mile.

Montgomery and West Point, 67 miles—barrels whiskey, etc., 60 cents; dry barrels, 55 cents; bulky merchandise, 8 cents per cubic foot; cotton, 95 cents per bale of 500 pounds; passenger fare, $3, or 4.47 cents per mile.

Vicksburgh and Jackson, 46 miles—sugar, coal, iron, and manure, 40 cents per 100 pounds; salt, 60 cents per sack; corn and grain, 10 cents per bushel; dry goods, 8 cents per cubic foot; cotton 87½ cents per bale of 400 pounds; horses and carriages, 12 cents per mile each; passenger fare, $3, or 6.38 cents per mile.

West Feliciana Road, 24 miles—freight, merchandise, provisions, etc., 50 cents per 100 pounds through; passenger fare 75 cents, or 3.1 cents per mile.

Lexington and Ohio, 28 miles—coal, corn and grain, 5 cents per bushel; iron, sugar, salt, butter, groceries and dry goods, light and bulky merchandise, hemp, bagging, and rope, 12½ cts. per 100 pounds; horses, $2 each; carriages, $2 to 3 each; passenger fare $1 25, or 4.46 cents per mile.

Madison and Indianopolis Railroad, 86 miles—coal, and wheat, 9 cents; corn, 8 cents; oats, 7 cents; flour, 35 cents; pork, lard, and salt, 50 cents per barrel; iron, five dollars per ton; groceries, dry goods, and light and bulky articles, 35 cents per 100 pounds; specie, one dollar per thousand; live hogs, 50 cents through; horses, $1 50 each, or one dollar with a passenger; passenger fare, $2 50, or 2.9 per mile.

Little Miami, 84 miles—coal, iron, sugar, salt, butter, groceries, and dry goods, $3 20 per ton; corn and grain, 7 cents per bushel; light and bulky articles, $4 per ton through; horses, 4 cents each per mile, carriages the same; passenger fare, $2, or 2.38 cents per mile.

Mad River, 102 miles—coal, iron, and manures $5 per ton; corn, 11 cents, wheat, 12¼ cents per bushel; flour, 45 cents per barrel; sugar, salt, and butter, 32 cents, and bulky articles 42 cents per 100 pounds; carriages, by weight, and horses by agreement; passenger fares $3 50, or 3.18 cents per mile.

Mansfield and Sandusky, 56 miles—iron, coal, and manure, $1 60 per ton; corn, 6 cents, wheat, 7 cents per bushel; sugar, salt, and butter, $2, dry goods, $2 50, bulky and light articles, $3 per ton, through; horses and carriages each 4 cents per mile; passenger fares, $1 50, or 2.67 cents per mile.

Michigan Central, 146 miles—iron, manure, coal, corn, grain, groceries, 39 cents per 100; salt, butter, beef, pork, fish, and sugar, $1, flour, 66 cents, whisky, beer, and cider, $1 10 per barrel; corn and grain, 39, wheat, 33 cents per 100 through; carriages, 45 cents per 100 pounds; horses, $2 35; hogs and calves, $1 64; sheep, $1 10 each; passenger fares, $4 40, or 3 cents per mile.

Southern Michigan, 70 miles—manure and iron, 24 cents, sugar and butter, 34 cents per 100; corn and grain, 11 cents per bushel; flour, 40 cents per barrel; salt, 34 cents per barrel through; passenger fares, $2, or 2.85 cents per mile.

Albany and Schenectady, 17 miles—iron, coal, and manure, $1 per ton; sugar, salt, groceries, butter, dry-goods, and bulky articles, $1 25

per ton; horses, $2; carriages, $1 to 2 each; passenger fare, 50 cents, or 2.94 cents per mile.

Troy and Schenectady, 20½ miles—rates same as on Albany and Schenectady; pasenger fare, 50 cents, or 2.43 cents per mile.

Utica and Schenectady, 78 miles—*prohibited* from carrying freight, except when the canal is closed, and then canal tolls are added to the ordinary freight charges; passenger fare, $3, or 3.84 cents per mile.

This line, in connection with the other lines from Albany to Buffalo, run a train at 1½ cents a mile for emigrants.

Utica and Syracuse, 53 miles—same as Utica and Schenectady Road; passenger fare, $2, or 3.77 cents per mile.

Syracuse and Auburn, 26 miles—coal, iron, and manure, 8 cents, sugar, salt, groceries, butter, and dry goods, 10 cents, and bulky merchandise, 20 cents per 100 pounds; horses, $1; carriages, $1 to $1 50 each; passenger fare, $1, or 3.84 cents per mile.

Auburn and Rochester, 77 miles—corn and grain, 27 cents, sugar, salt, butter, groceries, and dry goods, 20 cents, light and bulky articles, 30 cents per 100 pounds; horses, $3; carriages 5 to $7, according to size; passenger fare, $3, or 3.89 cents per mile.

Rochester and Attica, 44 miles—coal, iron, and manure, ½ cent per ton; grain, 1.5 cent per bushel; butter, salt, and sugar, 2.5 cent per 100; groceries and dry goods, 4½ mills per 100; bulky and light articles, 5 mills, *all per mile;* horses and carriages, 6¼ cents per mile each; passenger fare, $1 56, or 3.54 cents per mile.

Attica and Buffalo, 31½ miles—corn and grain, 3 cents per bushel; butter and sugar, 12 cents per 100 through; passenger fare, 94 cents, or 2.98 cents per mile.

Buffalo and Niagara Falls, 22 miles—freight, 10 to 12 cents per 100 pounds; passenger fare, 75 cents, or 3.4 cents per mile.

Lockport and Niagara Falls, 24 miles—passenger fare, 75 cents, or 3.12 cents per mile.

RAILROADS IN MASSACHUSETTS.

Statement of the length of eleven Railroads in Massachusetts, with their Branches; together with their cost, including stations and machinery, and their income, expenses of working, and rates of dividend paid, in 1847.

Railroads.	Length.	Cost.	Income.	Expenses.	Div'nds. Per ct.
Boston and Providence,	41	$2,544,717	$363,328	$175,345	7¼
Branches, - -	6.6				
Boston and Worcester, -	44⅝	4,113,609	722,170	381,985	10
Branches, - - -	14				
Boston and Lowell, - -	26	1,956,719	448,555	253,408	8
Branch, - - -	2				
Eastern, - - -	53	2,937,206	424,840	135,083	8
Branches, - -	20				
Taunton Branch, - -	11	303,742	53,727*	18,278*	8
New Bedford, - -	20	483,882	91,044*	29,519*	8
Branch, - - -	1				

Railroads.	Length.	Cost.	Income.	Expenses.	Div'nds. Per ct.
Western, - - -	156	8,769,473	1,325,336	676,690	8
Branch, - - -	18.65				
Norwich, - - -	66	2,187,249	234,895	141,433	0
Boston and Maine, - -	73	3,021,172	492,510*	186,032*	9
Branch, - - -	9				
Nashua, - - - -	14½	500,000	157,335	96,937	10
Fitchburg, - - -	50	2,406,723	376,110*	153,099*	10
Branches, - - -	5				
Total, - - -	621	$29,224,492	$4,689,446	$2,247,709	

Of these 621 miles of road, 126½ miles consist of double track, and 76 of branches. Besides the 16 branches embraced in the above statement there are five other branch railroads, already built, or in progress, at the expense of independent companies, which are, or when finished will be, worked by the companies above named, measuring 26 miles in length. The proceeds from the working of these branches go into the above statement of income, and the rents, or tolls, paid for the use of them, go into the account of expenses.

* Exclusive of amount collected for transportation on other roads, and paid over to them.

MASSACHUSETTS RAILROADS, RECENTLY OPENED WHOLLY OR IN PART.

Railroads.	Length.	Cost.	Receipts.	Expenses.	Div'nds. Per ct.
Old Colony, - - -	37⅓	$1,636,632	$171,153	$74,719	6½
Fall River, - - -	41 4-5	1,070,988	111,354	77,986	0
Prov and Worcester.*	43½	1,756,755	30,401		0
Connecticut River, -	36	1,167,156	123,951	50,018	7
Hartford and N. Haven,†	5⅞	193,402			
Pittsfield and N. Adams,	18⅔	446,353	25,974	17,798	0
Berkshire,‡ - - -	21	600,000	42,000		6
Vermont and Mass.§	58¾	1,143,638	6,292		0
Cheshire,§ - - -	53⅔	949,212			0
Stoughton Branch,‡ -	4	94,576	24,951	18,823	0
Dorcester and Milton,‡	3⅓	74,265			0
Essex,‡ - - - -	2	160,252	3,594		0
Total, - - -	326	$9,099,827	$439,670	$239,344	
Grand total, - -	947	$38,324,319	$5,129,116	$2,487,053	

* Opened October 20. † United with railroad in Connecticut. ‡ Leased. § Leased and unfinished.

In addition to the above, the following railroads are chartered, the companies organized, and the amount stated paid in by the stockholders or expended on the works:—

Railroads.	Length.	Am't paid.	Railroads.	Length.	Am't paid.
South Shore, - -	11	$42,190	Grand Junction, -	—	$450,947
Cape Cod Branch, -	27 4-5	257,433	Lowell and Andover,	12⅓	106,064
Worcester & Nashua,	45½	567,850	Stony Brook, - -	13	54,825
Norfolk County,	25	32,345			
Peterboro' and Shirley,	12	111,955	Total, - - -	146½	$1,624,609

Including the above expenditure on unfinished railroads, the amount expended on railroads in Massachusetts to the end of 1847 is $39,948,928, of which three-fifths paid in the last year dividends of 8 per cent. or upwards.

TUNNELS ON RAILROADS AND CANALS.

In the United States.—The longest tunnel in the United States is believed to be on the Chesapeake and Ohio Canal, 25 miles above Hancock. It is 3,118 feet long, 24 feet chord, and 17 feet from the crown of the arch to the water surface. If this canal should ever be extended to the Ohio, it will require a tunnel 4.05 miles long through the Alleghany Mountain. There are numerous other tunnels in this country, of which an account will be given hereafter.

In England.—In 2,700 miles of *canals* there are 48 tunnels of the total length of 40 miles. The Worcester and Birmingham Canal to Dudley, 13 miles, has 3 tunnels of 6,325 yards. The Ellesmere and Chester Canal, 1,262 yards of tunnelling. The Kingston and Leominster Canal, 45 miles, 2 tunnels of 5,100 yards. Leicester and Northampton Union Canal, 44 miles, 4 tunnels of 3,212 yards. The canal tunnel under Standige, between Manchester and Huddersfield, extends under ground upwards of *thres miles*, and is 220 yards below the surface.

The tunnel of the Liverpool and Manchester Railway, under Liverpool is 1 mile and 240 yards in length. It is an instructive illustration of the necessity of accurately measuring the probable amount of trade and travel before determining the dimensions of an important work, that the Liverpool and Manchester Railway Company are now commencing the construction of *another tunnel*, parallel to the present one—it proving to be altogether insufficient to transact the business offering.

The Chester and Holyhead Railway has 3 tunnels in 84 miles, amounting together to 2,160 yards, besides the iron tunnel bridge across the Menai.

The Great Western Railway, from London to Bristol, has 6 tunnels in 17 miles; one of which, the Box Tunnel, is 3,168 yards in length.

The London and Birmingham Railway Company are constructing a tunnel under the city of London, 2 miles in length, from the Western side of Maiden Lane to the Fleet prison yard.

The Sheffield and Manchester Railway Company has 1 tunnel above *three miles* in length; and, like the Liverpool and Manchester Railroad Company, are engaged in constructing another parallel to it, to accommodate their enormous business.

The Matlock, Buxton, and Manchester Railway Company, are making their road, under the superintendence of the experienced Mr. Stephenson, through the High Peak of Derbyshire—one of the roughest and most difficult sections of the globe for the construction of a railway. There will necessarily be many and long tnnnels.

In France and Italy.—The St. Quentin Canal, from Cambray to Chauny, 58 miles, has 4½ miles of tunnels. The Rouen and Havre Railway, 45 miles, has 8 tunnels, amounting in the aggregate to 6,294 yards.

The railway to connect Savoy with Piedmont, uniting the French system of railroads with the Italian, is to pass through Mount Cenis. The height of Cenis is 11,460 feet. From this may be inferred the character of the tunnel. It is said that a machine recently invented and approved by the French government, has been applied to the boring of this tunnel, and completes more than five metres of bore per day.

The railway from Genoa to Turin, 130 miles, will pass through the Appenines, by a tunnel over 7 miles long. The government of Sardinia is now engaged in its construction.

Such are a few of the tunnels finished, and in progress abroad. A consideration of them will tend to awaken attention to the great importance of saving daily and annual expenditure by a sufficient outlay in the first instance.—[*American R. R. Journal.*

TOLLS ON THE NEW YORK STATE CANALS.

Amount of Tolls collected on the New York State Canals during the season of navigation in each year since 1820.

Years.	Amount.	Years.	Amount.	Years.	Amount.	Years.	Amount.
1820,	$5,437	1827,	$859,058	1834,	$1,339,799	1841,	$2,034,882
1821,	14,388	1828,	838,444	1835,	1,548,972	1842,	1,749,204
1822,	64,072	1829,	813,137	1836,	1,614,680	1843,	2,081,585
1823,	152,958	1830,	1,056,922	1837,	1,293,130	1844,	2,446,375
1824,	340,761	1831,	1,223,802	1838,	1,588,848	1845,	2,646,181
1825,*	566,113	1832,	1,229,483	1839,	1,616,382	1846,	2,756,121
1826,	762,003	1833,	1,463,715	1840,	1,775,747	1847,	3,650,000

*Erie Canal opened from Lake Erie to the Hudson river, October, 1825.

Statement showing the comparative ratio of Expenses to gross Receipts, and the comparative cost per mile run on various Railroads, during the year 1846.

Names of Roads.	Rate of exp. to gross receipts.	Cost per mile run.	Total receipts.	Total expenses.
Georgia,	.38	$0 61	$400,935 46	$157,902 36
South Carolina,	.51	0 87	589,081 52	302,369 72
Boston and Lowell,	.55	1 05	384,102 29	212,233 62
" Maine,	.51	0 65	349,136 56	179,734 83
" Providence,	.47	0 85	360,375 03	169,670 48
" Worcester,	.51	0 96	554,712 46	283,866 11
Fitchburg,	.41	0 58	286,645 36	117,447 34
Western,	.47	0 72	878,417 89	412,679 80
Baltimore and Ohio,	.48	0 64	895,315 22	429,100 28
Central, (Georgia,)	.56	0 67	303,439 96	170,236 90

Number of boats built at Cincinnati, and other points on the Ohio river, from 1*st Dec.* 1847, *to* 1*st Dec.* 1848.

THE following list, says the *Gazette*, includes such, only, as have arrived at Cincinnati:

		Tonnage.	Value.
28	Cincinnati, O.,	10,600	$687,000
16	Elizabethtown, Pa.,	3,000	224,000
12	Brownsville, Pa.,	1,509	178,000
8	Wheeling, Va.,	1,844	130,000
5	Pittsburgh, Pa.,	1,087	69,000
5	Shousetown, Pa.,	1,061	91,000
4	Freedom, Pa.,	570	39,000
2	Lawrence county, O.,	140	5,500
2	Kanawha, Va.,	410	24,500
1	Portsmouth, O.,	295	13,000
1	Glasgow, Pa.,	138	9,500
1	Zanesville, O.,	111	8,500
1	Jessamine county, Ky.,	132	6,000
1	Marietta, O.,	50	2,700
2	Newport, Ky.,	316	16,000
1	Wellsville, O.,	143	8,000
Total, 90		21,406	$1,512,700

MANUFACTURES IN ST. LOUIS.

MANUFACTURE OF COTTON.

During the last year, Messrs. Adolphus Meier & Co., have erected a new factory in Soulard's Addition of the city, and will increase the number of their spindles to 2,600, during the present month. They design to increase the number of spindles to about 4,000, during the present year.

These gentlemen appear to have felt their way with great caution, and we think no better evidence need be required in regard to the profits of cotton spinning in St. Louis, than the enlargement of this establishment. They employ in their factory about 170 hands.

MANUFACTURE OF COTTON BATTING.

We were much interested some time since in a visit to the establishment of Messrs. Bredell & Baldwin, on Second street. Here is an unpretending establishment, working with a small engine and employing nine hands and some of them females and boys—manufacturing 800 pounds of cotton batting and 200 pounds of caulking per diem. We were informed that the batting sold at 11 cents per pound, and that the establishment was not sufficient to supply the demand. This little establishment works up about 600 bales of cotton per annum, equal to the product of about 100 hands, and the process adds about 100 per cent. to the value of the raw material. We did not inquire the amount of capital required to put the establishment in operation; but we should suppose from appearances that it did not cost more than probably $5,000. We were never before so forcibly impressed with the great difference between the cost and labor required in producing and manufacturing as in this instance.

The proprietors design erecting suitable buildings in the spring, and expect to manufacture 2,000 pounds batting and 400 pounds calking per diem, besides the manufacture of patent glazed cotton wadding.

MANUFACTURE OF FLOUR IN ST. LOUIS.

Since the commencement of the year 1848, three mills have gone into operation—one at the corner of Cherry and Collins streets, owned by Messrs. L. R. Chaffin & Co., with two run of stones, 4 feet, capable of grinding from 550 to 600 bushels of wheat per diem.

The Gay Street Mill, in the western part of the city, with two run of stones, capable of turning out about 120 barrels of flour per diem.

And the O'Fallon Mill, near the intersection of Fourth and Fifth streets, which we understand averages about 68 barrels of flour per diem.

There were 15 flouring mills in operation at the beginning of the year, and from the information that we obtained from the millers a year ago, there was manufactured in 1847 about 365,000 barrels of flour. We have not waited on all the establishments this winter, but all of whom we have inquired agree that the mills have done a larger business in 1848 than in 1847; and we think the quantity of flour manufactured in St. Louis in 1848 may be fairly set down at 500,000 barrels.

WESTERN LITERATURE.

Western Law Journal—edited by T. Walker and C. D. Coffin, of Ohio, and C. Gilman, of Illinois: published at Cincinnati, by J. F. Desilver, No. 112 Main street, at three dollars per annum, in advance.

We are indebted to the kindness of the editors for two entire volumes of this valuable Journal; and we take pleasure in recommending it to members of the bar as a work highly worthy of their patronage. We profess to know something of the value of law books, and are fully convinced that a volume of this work contains as much useful matter to the practitioner, as can be purchased from the book stores at double its cost. Indeed, the work contains much that is useful that cannot be obtained elsewhere.

We invite those of our professional friends who have not examined the work, to call at our office and satisfy themselves in regard to its merits. Nor should the patronage of this work be confined to lawyers alone; every intelligent merchant should be a subscriber also—for here he would find many things in relation to the laws of the several States, which are frequently necessary to be known by the man of business, and which are not always known to the local lawyer; besides, many a fee would doubtless be saved by one who would read this work carefully.

The Howard Queen.—This is the title of a "prize tale," from the pen of our citizen, Edmund Flagg, Esq. We are indebted to the publishers for a copy of this popular book, but our engagements have not permitted us to give it a careful perusal. We may, at some future time, give it a suitable notice.

CLUBS.

☞ Clubs, composed of four individuals, sending us ten dollars, will be furnished with the Western Journal for one year. The twelve numbers will constitute two volumes—and a general index will be furnished with the sixth and twelfth numbers.

THE

WESTERN JOURNAL.

VOL. II. FEBRUARY, 1849. NO. II.

ART. I.—ST. LOUIS—ITS EARLY HISTORY.

The commercial importance of the territory acquired by the United States, under the treaty between this government and Mexico, is calculated to produce sudden and extraordinary changes in the commerce of the entire continent; but in no other part of our country will the effects resulting from this acquisition be so extensive and important, as in the Valley of the Mississippi. Believing, as we do, that the events of the present age will compel the construction of a railway from some point in the Valley of the Mississippi to the Pacific Ocean, we are forced to the conclusion that the principal seat of commerce in the United States will, in time, be transferred from the coast of the Atlantic to the banks of the Mississippi. Admitting the probability of such an event, it is natural to inquire where the great commercial city of this region is to be located; and as the merits of several points on the Mississippi river have been discussed, it has occurred to us that an account of the early settlement and progressive improvement of the city of St. Louis, would be acceptable to our readers at the present time. We do not propose to write a history of St. Louis—the facts and materials in our possession are not sufficient for that purpose. We simply aim to connect some of the leading facts in its early settlement, with those relating to its development as a commercial city.

The following account of the early settlement and history of St. Louis is extracted from the address of Wilson Primm, Esq., made on the anniversary of the founding of St. Louis, on the 15th day of February, 1847. We should have been pleased to have published this interesting document entire; but owing to the number of contributions on hand, we are compelled to select such parts only, as have reference to the more important events, and which bear more directly upon the object which we have in view. Having introduced his subject with much judgment and taste, the author proceeds with the following historical facts:

The treaty of Aix la Chapelle, in 1748, which provided for the restitution of conquests made from each other, by the three powers* before named, was silent as to the boundaries of their respective possessions, and still left ample scope for violent contention.

France was in possession of the Canadas, and claimed the country bordering on the Mississippi southwardly, that region having been explored by persons who were her subjects, and having been partially settled under her auspices. However little profitable at the time, to either nation, a maintenance of their respective possessions in such an unpeopled, unknown, and wilderness country, may have been, still, the desire of aggrandizement and extended possessions, which characterize England and France to this day, urged them on to maintain what they claimed to be their rights.

France commenced by endeavoring to connect her Canadian with her southern possessions. To do this, a chain of connection had to be established, and this, under the superintendence of her civil and military engineers, was effected by means of military posts along the lakes, and the Ohio and Mississippi rivers.

Here, I cannot abstain from remarking, that nearly all the places selected by the engineers of the French government, or its agents, either for the purposes of fortification or commerce, have, within less than a century, grown from mere *germs* into cities, which command the trade, the business, and the commerce of the entire west.

In a country of such vast extent, and then so little known, can we assert that it was a knowledge of localities and resources, which prompted such selections? Was it the mere intuition of genius which brought it about? Or was it the Power, greater than that of man, which so ordained it, that this land, without the sufferings and ailments of long continued adolescence, should at once, like Minerva, spring forth into full and matured existence and power?

The course thus pursued by France was offensive to England. Her jealousy could not brook the establishment of a line of defences, which, at the same time that it settled *by occupation*, the question of France's boundaries, left the British power exposed to the attacks, not only of the French, but of the Indian tribes; most of which were on terms of warm friendship and alliance with the French government.

This proceeding on the part of the French authorities, was consequently resisted by England. War ensued between them, and was waged with fierceness. Pittsburgh and Quebec are instances of the deeds that were done in that sanguinary contest.

At this time, the colonial settlements on the Atlantic seaboard, were under tha domination of England, and were necessarily involved in the conflict between their mother country and the French, who, afterwards, and in another contest, became their kindest and firmest allies.

The war thus commenced on the shores of the New World, terminated its career within the limits of the Old World, and the preliminaries of the treaty of Fontainbleau, in 1762, which were carried into full effect by the treaty of Paris, of the 16th of February, 1763, put an end to the celebrated seven years' war on the European continent.

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*England, France and Spain.

By this treaty, England, besides being the undisputed possessor of the colonies on the Atlantic, acquired the Canadas and Louistana, lying east of the Mississippi, except the town of New Orleans and its territory.

This latter portion of country, claimed by the State of Virginia as her territory, was, after the American Revolution, ceded by her to the United States, under the name of the Northwestern Territory.

In consideration of the restoration of Havana and the greater part of the Island of Cuba, which had been conquered by the British, England, by the same treaty, acquired the Floridas from Spain.

By a *secret* treaty of the same date, the country lying *west* of the Mississippi, and which was then designated by the general appellation of Louisiana, was ceded by France to Spain; so that, at the date at which we speak, North America was under the control of the two powers of England and Spain.

The intercommunication between Europe and America was not, at that time, very rapid or definite; and it is fair to presume, that months must have elapsed before there was any promulgation of the settlement of conflicting interests, which had taken place between those three great European powers; and even when promulgated, we have every reason to believe, that there was a tardiness evinced, either the result of difficulty or fear, in the possessory acts of Spain, at least. For, it was not until the year 1768, that Spain exercised any permanent jurisdiction over the territory thus acquired by her, although as early as April, 1764, Mr. D'Abadie, the Governor General, had been directed to make known to the colony, the transfer which had taken place.

The English were more active in enforcing their rights under the treaty of 1763. As I intend to confine myself to those facts which more nearly concern the establishment of St. Louis, I note that *Fort de Chartres*, one of the chain of military posts established by France upon the line of her frontier, was surrendered to the English as early as the year 1765, some two years after the treaty, and some seventeen months after the foundation of St. Louis.

In the meantime, and until 1768, the province of Louisiana, which really belonged to Spain, remained under French laws and French jurisdiction.

Fort de Chartres, established in the American Bottom, a short distance above Kaskaskia, was garrisoned by French troops, and had become to the Province of Upper Louisiana, a nucleus, around which under the protection of the French government, numerous villages and settlements, on both sides of the Mississippi, had sprung into existence.

St. Ange de Belle Rive was the French commander at *Fort de Chartres*, and surrendered it to Captain Stirling, who had been appointed to take possession of it.

The transfer of possession from the French to the English control, was not pleasant to a race of men whose tastes, habits, religion and feelings, were so much at war with those of their new masters; and it is not a matter of surprise, that the descendants of those who battled against the British crown, in many a well-fought field, should leave their altars and fire-sides, and seek as they did, upon the western side

of the river, an abiding place, where nought should recall to their minds the idea of a subjection to a national, if not a natural foe.

It was during this state of the political and social aspect of the country, and whilst France was *de facto* governing the Province of Louisiana, that the first movement was made which resulted in the establishment of St. Louis.

In 1762, Mr. D'Abadie was Director General and Civil and Military Commandant of the Province of Louisiana under the French government. Invested with powers of almost a vice-regal character, he had control in Louisiana of all that pertained to governmental functions. The upper portion of Louisiana was but little known—its vast resources were unexplored—but to enterprising men there was enough known to warrant an undertaking, such as the Founder of St. Louis originated.

The lead trade, which was mostly concentrated at St. Genevieve, and the commerce in oils and peltries, which was in a measure monopolized by the neighboring small settlements and villages, still left abundant room for the development of the resources and capabilities of the upper Missouri and Mississippi rivers, and the countries bordering upon them.

The attempt to control the resources of a region so vast and unexplored, certainly required a sagacity of mind and an enduring firmness of purpose, which, from our knowledge of history would seem to have impelled a Columbus to the discovery of a new continent, and to have prompted such men as Cartier, LaSalle, and Hennepin, to the dangerous tasks which they undertook, and carried out with such daring.

In Pierre Ligueste Laclede was found a combination of the qualities which were required for such an undertaking. But we are left to deplore, that in the history of such a man, we can only start with the record of an act, eventful in our annals, and say that at a fitting time, he had been sent forth as the moving cause of great and wonderful results.

It was in view of the productive capacities and the resources of Occidental Louisiana, or rather of the Illinois, as this region was then called, that Laclede obtained from Mr. D'Abadie, in behalf of himself and others, the exclusive privilege, and the "necessary powers to trade with the Indians of Missouri, and those west of the Mississippi, above the Missouri, as far north as the river St. Peters."

The charter may have been granted by Mr. D'Abadie, more from motives of governmental policy, than from motives of personal kindness and friendship. The extension of settlements in Upper Louisiana would ensure an enlargement of French commerce and power, and would strengthen a claim to the exclusive right of navigating the Mississippi, which was even then entertained, and which, at a subsequent period, became a subject of such protracted and unpleasant negotiation between the American States and Spain.

The extent of the powers granted by this charter, cannot now, perhaps, be ascertained with precision; as no record, or even tradition of the same exists within my knowledge, beyond what has already been said. But, in consequence of the powers with which he was invested, Laclede formed an expedition, at the head of which he was placed, and started from New Orleans on the third day of August, 1763, for

the purpose of carrying into effect the powers which had been granted him.

On the third day of November of the same year, *three months* after his departure from New Orleans, he reached Ste. Genevieve, then a town of some note; but, finding no place suitable for the storage of his goods, and being still too far from the Missouri river, a proximity to which was an object of primary importance to him, he proceeded on to Fort de Chartres. This place was still in the possession of the French troops, the knowledge of the transfer to England being as yet unknown.

From thence, Laclede, in pursuance of the objects which he had in view, proceeded towards the Missouri river, in search of a suitable location—and, having fixed upon the site where our city now stands, he returned to the fort.

* * * * * * * *

In the beginning of February, 1764, Laclede left the *Fort des Chartres* for his point of destination, taking with him the men whom he had brought from New Orleans, a few from Ste. Genevieve, and some from the Fort and its neighborhood. On his route, passing through the town of Kahokia, then called "*Notre Dame des Kahokias*," he engaged several families to go with him to his proposed establishment.

On the 15th of February, 1764, Laclede and his party landed at the spot now occupied by our city, and proceeded to cut down trees and draw the lines of a town, which he named St. Louis, in honor of Louis XV, of France, a town which subsequently became the capital of Upper Louisiana, and which is now the commercial capital of Missouri.

* * * * * * *

In the year 1765, the Fort de Chartres was abandoned by the French troops, ostensibly because of the unhealthiness of its position, but really, because of its surrender to Captain Stirling, under the provisions of the treaty of Paris.

Mr. St. Ange de Belle Rive, the French commander of that fort, upon the surrender, removed with his officers and troops to St. Louis, on the 17th of July, 1765; and from that time, henceforth, the new establishment was considered as the capital of Upper Louisiana.

Immediately upon his arrival, St. Ange assumed the reins of government. Whence he derived his authority is unknown, for Mr. D'Abadie, about that time, had died, and his functions were exercised by Mr. Aubry, at New Orleans.

The inhabitants of St. Louis submitted to his authority without murmur, for they had always been accustomed to the mild and liberal policy of the French power; and even then, perhaps, the secret of their transfer to Spain, had been studiously concealed from them.

St. Ange called the inhabitants together, and by means of concessions or grants, which in the "*Livre Terrien*," form the basis of some of our most valuable titles, he granted to them the *title* to lands of which Laclede had only given them the *possession*.

* * * * * * *

From the time of its establishment, up to the year 1768, St. Louis had grown apace. The population had become settled; they had

erected dwellings of a comfortable character, and had improved and cultivated the neighboring lands. Every thing, in short, connected with their position and prospects, warranted the anticipation of a peaceful and happy existence, under a mild and patriarchal form of provincial government.

In the mean time, however, the fact of the cession of Louisiana, (not the terms of the cession,) had been made known at New Orleans. In 1766, whilst great dissatisfaction then prevailed, the Captain General, Don Antonio D'Ulloa, with Spanish troops, arrived there, and demanded possession in the name of Spain. This was refused, and the people of New Orleans indignant at a proceeding which had transferred them from hand to hand, like merchandize, drove back D'Ulloa from their shores.

In this state of *quasi* revolt, the population of Lower Louisiana remained, clinging to their loved government of France, until the arrival of Count O'Reilly, in 1769. The inhabitants of Upper Louisiana, fewer in numbers, and incapable of such resistance as had been manifested by their southern brethren, were compelled to submit to Spanish authority. Accordingly, we find that on the 11th of August, 1768, Mr. Rious, a Spanish officer, with Spanish troops, perhaps the very same that had been driven from New Orleans, arrived at St. Louis, and took possession of Upper Louisiana, in the name of his Catholic Majesty.

It would seem that the authority of Rious did not extend beyond the mere act of taking possession, for there is no record extant of the exercise of any civil authority on his part. On the contrary, we find from the archives that St. Ange continued until the beginning of 1770 to perform official functions.

Contenting himself with the performance of a mere possessory act, Rious, with his troops, on the 17th of July, 1769, evacuated Upper Louisiana, and returned to New Orleans—doubtless to aid O'Reilly in the occupation of the lower portion of the Province. In August of the same year, Count O'Reilly took possession of Lower Louisiana, and enforced submission to his power at once, by acts of great severity towards the leaders of the disaffected.

The transfer from France to Spain under the treaty of cession, having been thus completely effected, O'Reilly immediately established laws for the regulation of the whole Province; and in his capacity of Governor and Intendant General, he deputed Don Pedro Piernas to be Lieutenant Governor and Civil and Military Commandant of Upper Louisiana.

On the 29th of November, 1770, Piernas arrived at St. Louis, but it does not appear from any record or other evidence, that he entered into the exercise of his functions until the month of February following.

The inhabitants were soon reconciled to the change of dominion, for Piernas tempered all his official acts with a spirit of mildness, which characterized the course of nearly all his successors. Such measures were, indeed, imperatively required towards men who had come with ill humor under the Spanish power, and who would not, otherwise, have hesitated to follow the example before set by their brethren at New Orleans.

The policy thus pursued, brought about the strongest attachment to Spain; and when in 1800, the retrocession to France took place, the people manifested the deepest regret and dissatisfaction.

The mildness of the form of government, the liberal spirit with which grants of valuable lands were made, in connection with the advantages which the trade of the country presented, soon attracted immigration from the Canadas and Lower Louisiana. Settlements were formed along the Missouri and Mississippi rivers; and as early as 1767, *Vide Poche*, afterwards called CARONDELET, in honor of the Baron de Carondelet, was founded by Delor de Tregette. In 1776, *Florissant*, afterwards called ST. FERDINAND, in honor of the King of Spain, was founded by Beaurosier Dunégant; and in 1769, *Les Petites Côtes*, now ST. CHARLES, was established by Bianchette Chasseur; and numerous other small settlements sprang up, on the borders of the two rivers before named, and in the interior of the country.

Piernas was succeeded in his office of Lieutenant Governor, by Don Francisco Cruzat, in 1775, and he in his turn was supplanted by Don Fernando de Leyba, in the year 1778.

In February, 1779 the inhabitants of St. Louis, owing to rumors respecting the movements of the Northern Indians, became alarmed for their safety, and proceeded to erect temporary works for the defence of the town. The author says:

The territory on which St. Louis stood, that on which several other towns had been located, and the surrounding country, were claimed by the Illinois Indians; but they had acquiesced in the intrusions of the whites, and had never molested them. But, when the rumor of an attack upon the town began to spread abroad, the people became alarmed for their safety.

The town was almost destitute of works of defence; but the inhabitants, amounting to a little more than a hundred *men*, immediately proceeded to enclose it with a species of wall, formed of the trunks of small trees, planted in the ground, the interstices being filled up with earth. The wall was some five or six feet high. It started from the *half moon*, a kind of fort in that form, situated on the river, near the present *Floating Dock*, and ran from hence a little above the brow of the hill, in a semi-circle, until it reached the Mississippi, somewhat above the *bridge*, now on Second street. Three gates were formed in it, one near the bridge, and two others on the hill, at the points where the roads from the north-western and south-western parts of the common fields came in. At each of these gates was placed a heavy piece of ordnance, kept continually charged, and in good order. Having completed this work, and hearing no more of the Indians, it was supposed that the attack had been abandoned. Winter passed away, and spring came; still, nothing was heard of the Indians. The inhabitants were led to believe that their apprehensions were groundless, from the representations of the commandant, Leyba, who did every thing in his power to dissipate their anxiety, assuring them that there was no danger, and that the rumor of the proposed attack was false. The month of May came, the labors of planting were over, and the peaceful and

happy villagers gave themselves up to such pursuits and pleasures as suited their taste.

In May, 1779, "numerous bands of the Indians, living on the lakes and the Mississippi—Ojibeways, Menominies, Winnebagoes, Sioux, Sacs, &c., together with a large number of Canadians, amounting in all to upwards of 1400, assembled on the eastern shore of the Mississippi, a little above St. Louis," and having crossed the river on the 26th day of May, they made an attack on a portion of the men who were in the fields. The inhabitants of the town repelled the attack with spirit and bravery, but the greater part of a company of militia, that had been brought from Ste. Genevieve to aid in defence of the town, either through fear or treachery, hid themselves in a garret, during the attack—while the Lieutenant Governor, Leyba, who, as it was believed, had been bribed by the British, was guilty of the most open acts of treachery to the citizens. From eighteen to twenty of the inhabitants fell in this battle; but it does not appear that any of the assailants were killed. Of this attack the author says:

It forms an era in the history of the place; and the year in which it occurred has ever since been designated by the inhabitants, as the *year of the blow*—"L'année du Coup."

Leyba, aware that representations of his course had been specially forwarded to the Governor General at New Orleans, and fearful of the consequences, and unable to bear up under the load of scorn and contempt which the inhabitants heaped upon him, died a short time after the attack, suspected by many of having hastened his end by poison.

Upon his death, Cartabona performed the functions of government until the following year, when Cruzat returned to St. Louis, and assumed the command as Lieutenant Governor a second time.

There can be no doubt that Leyba, like another Arnold, was seduced into defection from his duty; and that it was only the unflinching daring of the people of St. Louis, that saved this infant outpost from utter destruction.

* * * * * * *

During the second administration of Mr. Cruzat, was witnessed the rise of the Mississippi, which has formed an epoch with the ancient inhabitants, and which, from its extent, has been called by them "L'Année des grandes Eaux," *the year of the great waters.* The river rose thirty feet above the highest water mark ever known; the town of Kaskaskia was nearly swept away; the low lands on the eastern shore of the Mississippi, as far back as the bluffs, were so completely overflowed, that men went through the woods to Kaskaskia in boats and barges. The bottoms, being at the time but thinly settled, this rise caused but little destruction of property.

This rise occurred in April, 1785, and in the annals of St. Louis, is only paralleled by the rise of 1844, with which we are so familiar.

Under this administration, too, were begun those fortifications, which,

until a few years past, were in existence along the brow of the more elevated part of the town.

The fortifications consisted of a square building, called the *bastion*, situated at the northern extremity of the hill, nearly opposite the half-moon ; of a circular fort, directly south of the bastion, and situated on what is now called Olive street ; of another circular building, which served both for a fort and prison, south of that last mentioned, and situated on Walnut street ; of a circular fort, in a line with and south of the others, situated at the extremity of the hill, near what is called Mill Creek ; and, finally, of another circular fort, east of the latter, and somewhat above the bridge near the river. All of these fortifications were provided with ammunition and artillery, and soldiers were kept constantly on guard in them. The forts, besides, were connected together by a strong wall, made of cedar posts, planted upright in the ground, fitted closely together, and with loop-holes for small arms between every two. These precautionary defences had been dictated by the danger which had been incurred, and which was fresh in the recollection of all, and probably had the effect of preventing any farther assaults upon the place. The inhabitants were never afterwards molested.

By the treaty of St. Ildefonso, of the first of October, 1800, Spain, under certain conditions, retroceded the property and sovereignty of Louisiana to the French Republic, notified the Intendant of that Province, in July, 1802, of the act of retrocession, and ordered him to deliver it up to the French commissioners. It was not, however, until the month of December, 1803, that the Spanish authorities transferred the possession to Mr. Laussat, the French commissioner.

In the meantime, as early as the 30th April, 1803, Mr. Jefferson, with a forecast which the lapse of only the half of a century has stamped with the seal of the greatest political wisdom, had concluded a treaty, by which France sold Louisiana to the United States, for fifteen millions of dollars.

The embarrassed condition of France, and her deranged finances at that time, resulting from her numerous and complicated wars—and the fact that such a transfer would promote mutual interests, and strengthen mutual friendships, fully justified France in the act.

Gov. Claiborne and Gen. Wilkinson were appointed by the government of the United States as commissioners, and on the 20th of December, 1803, at New Orleans, the possession of Louisiana was transferred to them, by Mr. Laussat.

Amos Stoddard, a captain of artillery in the service of the United States, and to whom we are indebted for an admirable historical sketch of Louisiana, was constituted by the French Republic, as her agent for receiving from the Spanish authorities, the possession of Upper Louisiana. Accordingly, he arrived at St. Louis, in March, 1804 ; and to use his own words, "in her name, received possession of that Province, on the ninth day of March, 1804, and the next day transferred it to the United States."

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Congress soon provided for the temporary government of the country thus acquired by the United States, and Stoddard was appointed to

exercise all the powers and prerogatives of the Spanish Lieutenant Governor, in Upper Louisiana.

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In his sketches of Louisiana, Stoddard says that St. Louis has two long streets, running parallel to the river, with a variety of others intersecting them at right angles. This statement is only partially correct, for the street now called Third street then existed, and was known as "La Rue des Granges,"—*the street of the barns.* And in the common parlance of the country, First street bore the appellation of "La Rue Principale"—*the principal street;* and Second street that of "La Rue de L'Eglise"—*the street of the church,* from the fact that the only church building of the town fronted on that street. This was a structure of hewn logs, planted upright in the ground, and covered with a roof, the eaves of which projected beyond the body of the building, and formed a kind of gallery or promenade around it. Some of the pews which were in that old church, still occupy a place in the Catholic Church of the town of Carondelet.

At the time before mentioned, according to Stoddard, St. Louis contained about one hundred and eighty houses, and a population in its district, of some two thousand two hundred and eighty whites, and some five hundred blacks—three-fifths of the population of Upper Louisiana being Anglo-Americans.

* * * * * * * * *

On the 26th day of March, 1804, the country was constituted a District of the United States, under the name of the District of Louisiana, and, on the 1st day of October of the same year, William Henry Harrison, then Governor of the Territory of Indiana, and of the District of Louisiana, instituted the American authorities here, by the establishment of a code of laws for its government, under the provisions of the Act of Congress of 26th March, 1804.

On the 3d of March, 1805, this country was erected into a territory of the United States, by the name of the Territory of Louisiana, and on the 4th of June, 1812, it received the name of the Territory of Missouri.

* * * * * * * * *

In 1817, the "General Pike," the first steamboat that ever ascended the Mississippi, made its appearance at St. Louis. Those who lived here at that time, can well remember the fear and consternation of the people who saw that craft, breasting the sturdy current of the river, without the help of sail or oar; and they can also bear in recollection the execrations and forbodings of the nervous and hardy *voyageurs,* who felt and knew that the days of the *warp* and *cordelle,* and of the *red feather in the cap,* were to pass away.

Although it is eighty-five years since the first settlement of St. Louis, yet it will be perceived, by reference to the following statement of the population, at different periods, that the principal increase has taken place within the last ten years:

1810,	1,400	1820,	4,598
1815,	2,000	1828,	5,000

1830,	- -	5,852	1841,	- -	19,063
1833,	- -	6,397	1843,	- -	28,357
1835,	- -	8,316	1844,	- -	34,140
1837,	- -	12,040	1845,	- -	36,265
1840,	- -	16,469	1847,	- -	47,974

The population of the city and suburbs may now be set down at 60,000; an increase of fifty thousand in about twelve years.

Revenue.—The assessed value of property in the year 1835, was $2,221,888; in 1847, the assessment amounted to $16,665,145 76, and the revenue collected from all sources, increased from $31,595 65 in 1835, to $293,359 05, in 1847. Under the head of St. Louis statistics, will be found a table, showing the value of property assessed, rate of taxes, and amount of revenue collected from all sources, from the year 1818 to 1847, inclusive.

Churches.—We have met with no account showing the time when the first catholic church was erected. This was a wooden building as stated by Mr. Primm, and was doubtless erected shortly after the first settlement. The first church built of brick, was erected by the Catholics, on Second street, in the year 1818, and service was first performed in it on Christmas day, 1819. A brick building, designed for a Baptist Church, was commenced at the corner of Third and Market streets, in 1818, but was never completed for that object. A Methodist Meeting-house, a frame building, was erected at the corner of Myrtle and Fourth streets, in 1823. The first Episcopal Church, a brick building, was erected near the corner of Chesnut and Third streets, in 1825. This building was subsequently transferred to the Baptist congregation.† On the 23d day of November, 1817, the Rev. Salmon Giddings, organized the first Presbyterian Church, which consisted of only nine members, seven of whom were females. Stephen Hempstead, sr., and Thomas Osborne were the only male members.

In a published sermon delivered by the Rev. Artemas Bullard, in 1839, he says of this church: "It was the first of any Protestant denomination formed in this city." In March, 1823, this congregation resolved to commence a house, which was dedicated on the 26th June, 1825. This is a respectable brick building, beautifully located on Fourth street, and with the ground, cost about $8,000—a large sum for a church, in those days.

There are now in this city 41 churches and one Jewish Synagogue. Of these, 8 are Roman Catholic, 5 Episcopal, 10 Presbyterian, 7 English and 2 German Methodist, 3 German Reformed, 2 Lutheran,

†We are indebted for the foregoing facts, in respect to the churches, to a statement made by George Morton, Esq., printed with Mr. Primm's address.

1 Baptist, 1 Campbellite, 1 Unitarian, and one Swedenborg. A number of these buildings are large, and some of them fine specimens of architecture.

Institutions of Learning.—The St. Louis University is among the most extensive and respectable literary institutions of the West. The number of students who attended the literary course in 1848, was 257. There are eight professorships in the literary department. It has also a theological and medical department; in the latter of which there are nine professors, and one demonstrator of anatomy.

The medical department of the University of the State of Missouri is also located in this city. These medical schools are both in a flourishing condition, and are highly creditable to the energy and talents of the learned gentlemen who have been chiefly instrumental in getting them up.

There are 13 public schools, supported mainly by the income derived from town lots donated by Congress to the city for the use of schools; the real estate belonging to the public schools is estimated at the value of about $250,000. The number of pupils attending these schools in 1848 was about 1,800.

Convents and Female Academies under the direction of the Roman Catholics.—In the Convent of the Sacred Heart there are 30 religious, 7 of whom are novices, and 28 orphans are supported in the Mullanphy Asylum attached to the institution. A young ladies' academy is conducted by the ladies of this establishment, and besides there is a free school which contains 70 children.

Convent of Visitation of B. V. M.—In this Institution there are 31 professed sisters, 4 novices, and 1 postulant; they have charge of the Young Ladies' Academy of the Visitation. *Sisters of St. Joseph.*—There are two Houses of this Society in the city—one, in which there are 2 professed sisters, and 2 novices—who have charge of a day school of 130 pupils; another, in which there are 5 professed sisters, and 4 novices, who have the direction of a Male Orphan Asylum, containing 80 orphans. *Sisters of Charity of St. Joseph.*—The Sisters of Charity, whose mother house is at Emmetsburg, Md., have four establishments in St. Louis: 1. *Hospital*, served by 14 sisters—number of beds, 300.* 2. *St. Mary's Asylum*, served by 9 sisters; there are 88 female orphans in the house, and 250 pupils in the day school. 3. *School of St. Philomena*, conducted by 4 sisters—number of pupils, 170. 4. *St. Vincent's School*, for girls, attached to the Church of St. Frances Xavier, served by 7 sisters—average number of

*Besides this there is a City Hospital, erected upon a liberal scale; but we are not advised of the number of individuals that it is capable of accommodating.

pupils, 180. *Ursuline Convent.*—This community, from the diocess of Raab, in Hungary, devotes itself to the education of German female children. Besides these, there is an English male free school attached to the Church of St. Frances Xavier—average number of pupils, 300; a German male free school attached to St. Joseph's Church; a boy's school attached to St. Patrick's Church; a boy's free school attached to the Cathedral—average number of pupils, 200; besides a number of other associations for benevolent and charitable purposes.

Protestant Charitable Institutions.—There are two Protestant Orphan Asylums in the city—one supported by the Episcopal Church, and one conjointly by the other Orthodox Protestant Churches. There are two free schools under the patronage of the Presbyterian Church. Besides these public and charitable institutions, there are a great number of private schools and academies, both male and female.

Newspapers.—The first newspaper in St. Louis, or west of the Mississippi, was issued on the 12th July, 1808, on a sheet of writing paper, by Joseph Charless, and called the "*Missouri Gazette.*" In the spring of 1815, a second newspaper was established, conducted by Joshua Norval. There are now 13 newspapers published in St. Louis; 6 of these are published daily; 3 are published in the German language. There are also 6 periodicals, published monthly.

Manufactures.—The following constitute the leading branches of manufacturing at present established in St. Louis, viz:

12 foundries, which employ about 550 hands, and consume about 7,000 tons of metal per annum; 19 flouring mills, which manufacture about 500,000 barrels of flour per annum; 2 sugar refineries, one of these, owned by Messrs. Belcher & Brother, is on a very extensive scale; 2 white lead factories, both on an extensive scale; 2 sheet lead and lead pipe factories; 1 shot factory; 1 cotton factory; 1 woolen factory; 3 distilleries; 16 breweries, &c.

This list might be extended so as to embrace almost every branch of manufactures known in the United States; but as all these are yet in their infancy, and generally on a limited scale, we have omitted to enumerate them. The commercial statistics of the city, to which we refer the reader, will be found under the proper title in the subsequent pages of this number.

Having taken a hasty view of the past and the present, we propose to conclude this article with a few observations in reference to the future. This is the department of history that the people of this country most delight in—the privations, the self-reliance and daring adventure of the pioneers no longer excite emotions of admiration; and even the glorious deeds of our revolutionary ancestors fade before the

bright visions of future greatness which present themselves to the imagination of the Americans of the Anglo-Saxon race. This habit of anticipating the future may be considered a weakness, and appear ridiculous in the eyes of foreigners; but there is philosophy in it, nevertheless—it is a quality inherent in the American character, and necessary to enable us to achieve the mighty objects of our mission. The population in this country doubles in about twenty-four years, and the individual who has attained the age of forty-eight years has seen the numbers increase from 5,305,925, to about 21,000,000; and by the same rule, one who lives forty-eight years from this time, will see a population of about 85,000,000. Without this habit of anticipating the future, these vivid impressions of the greatness that awaits us as a nation, we should be totally incompetent to give a wise direction either to our individual labors, or to the policy of the nation. It is natural, therefore, that we, more than any other people, should exercise our minds in contemplating the future; and, consequently, according to sound principles of philosophy, this mental exercise is a source of pleasure to us, which is unknown to all others.

The principles that govern the growth of towns are so obvious, that we have frequently wondered how it happens that they are overlooked by very intelligent individuals, who are sometimes known to spend their lives in fruitless efforts to build towns at unfavorable points, without seeming to suspect that they are laboring against causes that can never be removed. In the first settlement of a country, the towns are usually located so as to accommodate the settlers, with little regard to the ultimate advantages of their location; and as the settlement of the country extends, it is often discovered that some of these are not needed, and consequently, they are abandoned. A district of considerable extent may require a commercial town for the shipment of its produce, and there may be several points that are equally convenient for this purpose. In such case, in the beginning, a very small matter will determine in favor of one or the other. But when a town at some one of these points shall have become established in its growth, and progressed far beyond its competitors, these can never again become its rivals without the aid of a new element; for capitalists never risk their money in building up towns that are overshadowed by their neighbors—and the merchant who makes the experiment, soon discovers that buying customers is a ruinous operation. The town that has fallen behind in its growth, is compelled to contend not only against the active capital and enterprise of its more prosperous neighbor; but against the value of the grounds and improvement which it contains also; for these constitute a basis or fixed cap-

ital, on which money or credit may be obtained at pleasure. And from these, and other causes of like nature, there is not an instance, perhaps, in all history, where a large town has lost its business by reason of a smaller one having grown up within its neighborhood and influence.

Facility in receiving and distributing commodities, is an essential element in the growth and permanent prosperity of commercial and manufacturing cities; for, as the charges on transportation must be added to the cost of production, it is the true policy of both producers and consumers, to effect their exchanges at as little cost of transportation, as practicable. In respect to the natural facilities of receiving and distributing commodities, it may be safely affirmed that St. Louis possesses advantages over any other city on the continent. Being near the centre of the valley of the Mississippi, it is also at, or near, the centre of the most extensive system of navigable streams on the globe; and by a canal, already completed, a communication is established with the chain of lakes on our northern boundary, at a point near their centre. But St. Louis is not to be considered as the commercial centre of the valley of the Mississippi merely; for, if we imagine this region to contain a population of 150,000,000—a fact that individuals now in being may live to see—it must become the great commercial emporium of the continent—the point where will meet and be distributed the commerce of both Europe and Asia—for it would be absurd to suppose that the commerce of the Pacific would pass through this region to cities on the Atlantic, and return here for consumption; or, that the eastern cities would continue to buy and sell all the European merchandise consumed by the inhabitants of the west. We have shown, in the January number of the WESTERN JOURNAL, that the great lines of railroad improvement, commencing on the Atlantic and Gulf coast, converge to this point; and hence it is evident that the commerce of the Pacific can be distributed even among the Atlantic States, from here, with more facility than from any other place.

Cheapness of food is also an essential element in the growth of cities; and, although this item might be properly placed under the head of "facilities of receiving and distributing," yet we desire to notice the peculiar advantages which this point possesses over all others in this respect.

Its central location in the region of *Indian Corn*, and the cultivated grasses, will make it, always, the most abundant provision market, perhaps, in the world; and, owing to the extent of river navigation, these articles can be brought to this point in larger quantities, and at

lower rates, than at any other point in America, situated below the mouth of the Ohio, or above the confluence of the Missouri river.

Cheap fuel, especially coal, is another important element in the growth and prosperity of cities; and, in this respect, St. Louis possesses advantages over any other point on the Mississippi, except, perhaps, the town of Alton, in Illinois, and over any other city in the Union, except Pittsburgh, in Pennsylvania—although there are, doubtless, points on the Ohio, and other tributaries of the Mississippi, where coal can be obtained cheaper than here. Stone, suitable for lime and building purposes—clay, for brick—and sand, for mortar—all exist within, and immediately adjacent to, the city, in quantities that may be regarded as inexhaustable.

Possessing all these elements and advantages, it seems to us that there can be no reason to doubt, but that St. Louis must ever be the principal city on the banks of the Mississippi; and consequently, other considerations being equal, *the best point of all others for the commencement of a railroad to the Pacific Ocean.*

ART. II.—BON HARBOR: ITS ADVANTAGES FOR MANUFACTURING.

Having seen but a very imperfect account of the extensive manufacturing establishments that have for some time been in progress of erection at *Bon Harbor*, on the Ohio river, and desiring to collect information respecting the improvements that are being made in every part of the country, we addressed a letter to Messrs. Triplett and Barrett, requesting them, if consistent with their views of propriety, to furnish us with an account of their establishment, including the nature and extent of their operations at that place. We also desired information respecting the natural resources and trade of the region in which Bon Harbor is located; and the advantages of manufacturing at that point.

The following communication from Mr. Triplett, is in answer to our inquiries, and fully sustains an opinion we have long entertained that, for the manufacture of cotton, iron, &c., Bon Harbor and its neighborhood possess greater advantages than any other point in the United States. And it seems to us that nothing but the timidity of capitalists and a prejudice in favor of locations long established, has prevented these advantages from being improved long before the present time.

The improvement of these advantages was reserved for the sagacity and enterprise of Messrs. TRIPLETT and BARRET, who are entitled to the profound gratitude of the inhabitants of the west, for devoting their talents and energies to the development of its resources.

BON HARBOR, December 22d, 1848.

GENTLEMEN:—In the absence of Mr. Barret, who is in Europe, I venture to answer, individually, the note which you addressed to us jointly.

Presuming your object in asking an account of Bon Harbor, is, to carry out, so far, your plan for developing the resources of the west, I venture to take a more general view, at first, than you invite—because much of this view I would have to take, even in giving the answer required—and, as what is applicable to Bon Harbor, is, to a great extent, also applicable to the other coal mines on the lower Ohio and upper Mississippi, I prefer to treat, generally, of what relates to the coal region, and also to the general interests of the west.

The present condition of Europe, causes capitalists to feel very uneasy in regard to their investments there. They are looking with anxiety to our country, with a view to a transfer; but few of them understand the genius of our government, and its practical operations, well enough to be satisfied that it has yet been sufficiently tested to determine that it will stand. As this is a primary consideration with them, it is all important they should be satisfied on that head.

I venture, therefore, in advance of my answer to your letter, to offer an essay on the stability of our government, showing that its construction, and genius, tend to its strengthening with age, and that no where do such strong inducements exist for the investment of capital, as in the Mississippi valley, and more especially at the coal mines on the lower Ohio, and upper Mississippi, which must, inevitably, become the great manufacturing region of America, because of the greater cheapness of living—cheapness of fuel—proximity to raw material—and being in the midst of the best home market.

Finally, I venture to show that a great western Lowell must spring up on the banks of the lower Ohio, and present the claims of Bon Harbor to be considered that point, or one of them, for there will probably be many.

Being much pressed by other calls, I may probably have been too much hurried to do this subject justice. Very respectfully,

ROBERT TRIPLETT

TO FOREIGN CAPITALISTS.

While all Europe seems to be on the brink of a political volcano, and capital there, consequently very unsafe, it may be worth the inquiry, whether greater safety may not be found in the United States, as well as more profitable investments.

The strength and stability of the government, we consider as having

been effectually tested. An examination into its construction and operation, must satisfy the political philosopher, that it is becoming daily stronger. Every motive which could operate upon the interest or the ambition of man to destroy it, has already existed. Every element of self-destruction which might be supposed to prevail from an unsound original organization, from the natural corruption of human nature, or from almost any other cause, has had full time to exert its influence; and all such elements, which can have an existence in the nature of our government, have exerted their utmost power, but to no effect. A part of the citizens of Pennsylvania revolted under the whisky tax. But the national arm, and moral power of society, quieted every thing without bloodshed. Ohio resisted the location of a branch of the United States Bank within her borders, and laid a heavy tax to drive it out, collecting this tax by force. But the national arm soon forced her to restore it. South Carolina made the most fearful opposition to the Federal laws—but she, too, was quieted—other disturbances have existed, but all ended without difficulty; and by whomsoever those difficulties are originated, there is a moral obloquy afterwards resting upon them in the estimation of the other States, and people of the Union, which forever debars them from political elevation, and is a warning to all future aspirants, who would disturb the general peace to advance their own selfish purposes.

No sudden uprising against the laws of our country, can ever take place—no rebellion against the government—because it is an intangible thing. With an army of a million of men, all willing to do the bidding of an ambitious leader, our government could not be shaken, because it could not be taken hold of—there is nothing to touch—nothing which can be controlled without the public will. It is not as in Europe, where a possession of the capital—of the public offices—the records—and the throne, or seat from which power radiates, give possession of the government and country, where all public officers are held bound to obey mandates coming from the powers that be for the moment, and will be punished as rebels if they do not. No! in America, its citizens are its public officers—its magistrates, without salaries—judges, independent of all control—and executive officers, subject to the direction of the judges.

The judges are of the people—mix and associate with them daily. The sheriffs are, likewise, and so execute the laws, with a regard to humanity, as well as to justice, that while a dereliction of duty would soon cause the loss of their offices, it is so much to their interests to be courteous and mild, that a few years action in the office most commonly sends them to represent the people in the legislature—neither judges, magistrates, nor sheriffs, would dare to lend their aid to carry into effect the mandates of any usurper. His authority would be nothing beyond the confines of the boundary occupied by his troops. And, as every man in America is a soldier, unless more than half were enlisted to overset the government, it could in no case be done—and, if more than half could be enlisted, force would be needless, as the desired result could be obtained through the medium of the ballot-box. For this reason there can be no secret conspiracy—there is no need for a public police, nor for a standing army, except to keep for-

tifications in order, and check the Indians. Because, for every necessary purpose, a posse of the people can at any time be raised to execute the laws. Resistance to our laws is never heard of, because every man in the community is a conservator of the peace, and bound to lend his aid when required. Our laws are as invincible as the atmosphere, and as prevalent.

Neither do we want standing armies for war. Our late contest with Mexico is evidence of this.

It might be argued that, where a majority govern, there would be danger of aggrarianism. Not so where three-fourths of the population, as with us, are land-holders. Their interest is in favor of the rights of property, and the proportion of land-holders will be continually increasing, as there is among us no rule of primogeniture. Every man's property is divided among his children, and almost always equally. So cheap, too, is land, that three months' labor will buy forty acres in the new States, so that the proportion of land-holders, compared with the balance of the community, is, from various causes, continually increasing; and, in proportion to that increase is the interest of the people in favor of a government of just laws, where the interests of all are protected, and the rights of property inviolably secured.

But, in addition to the causes before enumerated, why our government will stand, and become more stable annually, is the Federal system upon which it is based.

Our government is made up of thirty separate parts, each being a State, independent of the rest in every thing, except national matters. There are no national officers of the law among us, except about one judge to each State, and a marshal to execute process in suits between citizens of different States brought in the federal court, and in cases where States themselves are parties, so that there would be no machinery of government by which any power in possession of the federal government could control the people of the States. The State officers are not under the control of the general government, and would not obey it. Even the goals and court houses belong to the States, and are used by the federal authority, on sufferance from the States. Of course, as every State manages its own internal policy unconnected with, and independent of, the general government, the possession of the general government by any usurping authority, even if its officers would obey that authority, would amount to nothing. It would have no governmental machinery to operate with. To control the States then, it would be necessary to get possession of thirty different governments, and certain we are, that one hundred thousand men in each could not hold them.

Upon the score, then, of military force, there never can be danger. Upon that of internal commotions, as one thirtieth of the country could only be affected at any one time, by any one commotion, no permanent injury can be apprehended from that cause—and the only possible cause of fear is the combination by one portion of the States against the rest. Of this, however, there is nothing to apprehend.

If our population possessed no more intelligence than the average of the world, it would be almost impossible, under our constitution,

for it to fall; because the general government guaranties to each State a republican form. Should a revolution occur in any one State, by force of arms or otherwise, to change the character of the government, it never can be done; and of this I conceive there is not a remote possibility. The more enlightened we become, of course, the less danger there is of any such effort. The freedom of discussion, the habitual inflammatory character of our newspaper essays on political subjects —the number of those newspapers—the various questions always dividing the public mind, and the high strung continual struggle to engage and inflame the public mind from every quarter, neutralizes the various effects of each, like a thousand storms blowing from every point of the compass, destroying the effects of each other, they produce a general equilibrium. All inflammatory matter having selfish ends in view, result finally in nothing; and that sound reasoning which reaches the understanding alone, has any effect. The American people are, perhaps, the most reading community, and are better informed on their own governmental concerns, than any other on earth. Every man has a direct and deep interest in them, and this intelligence is annually increasing, newspapers multiplied, and cheapened in price. At this time there are monthly papers of the very largest class printed for twenty-five cents per annum. Many at shorter periods, for one dollar, and some of the finest weeklies on the continent for two dollars. The postage is merely nominal, and amounts to almost nothing. Nothing is more uncommon than to find a family without a newspaper. The effect, then, must be a continually growing intelligence, and consequently an increasing strength in our government, now incomparably the most fixed and permanent one on earth.

Thus the security of investments in real estate, never can be assailed, while the general interest is in land, as it always must be. The stocks of our general government never can be in danger, because any administration which runs the government unreasonably into debt, is immediately overthrown, and no public cry is so potent as to clear the nation of debt. Any administration wishing to be popular must proceed to do that. Small and young individual States, yet in their infancy, have repudiated. But the scorn of other States, and the power of public opinion, always bring them right again. No citizen of such a State can travel abroad without being pointed at. Such a State is under the ban—and the moral sense of her people becomes sore and sick under the odium, and they finally reinstate themselves.

The United States Bank of Pennsylvania was a State institution. No one ever lost a cent by the Bank of the United States. But when that institution went out of existence, a State institution was incorporated in Pennsylvania, which assumed the name above—thereby, as we conceive, practicing a fraud on the public. But that was a private incorporation, and liable as all banks, and individuals are, to the casualties of trade, for which neither the National nor State governments are blameable.

Our object is to establish the position, that funds invested upon the faith of the stability of the American government, could not be more safely invested, and of all the investments, none could be safer than in real estate well chosen—for in case of revolutions, real estate is always respected.

Viewing our whole political fabric comparatively, with the balance of the world, there is nothing, and never has been anything like it. Every State moves within its orbit—enjoying the benefit of its own laws, and its own wisdom—untrammelled by the acts of any other State. Each can develop its own energies, and give life to the enterprise of its citizens, in the way it deems best. Ours is a great national co-partnership, the only credentials to an entrance into which, is a republican form of government. From thirteen States it has increased to thirty. The usual objection to such an extent of territory being under one government—that the same laws cannot suit every climate, and do equal justice over so wide a surface—does not hold here, because every climate, and every region, has its own laws, and however they may differ, it in no way interferes with the harmony of the whole system. T.

N. B. The objects of investment may, perhaps, form the subject of a future paper, T.

GROWTH OF THE VALLEY OF THE MISSISSIPPI.

The following is the progression of population decennially:

	In 1790.	1800.	1810.	1820.	1830.	1840.	1850.
Souls,	200,000	560,000	1,370,009	2,580,000	4,190,000	6,370,000	12,000,000

Carrying on the said progression, it would be about—

In 1860.	1870.	1880.	1890.	1900.
23,000,000	40,000,000	70,000,000	120,000,000	190,000,000

The progression of exports could not be in the same proportion, because, for many years after each settler fixed himself upon the ground, he has not cleared land enough to furnish more than the wants of his own family; and the in-coming emigration afterwards, for a long time, gives a market at his door for what he has to sell. It is the surplus only which will remain for export. While the country is comparatively in an unsettled state, the shipping surplus will be very small. But, to give some idea of the rapid growth of the export trade of the west to New Orleans, as the production at home begins to exceed the home demand, the growth of the steamboat trade will show. This was very slow at first, for the reasons above named: say in 1820, it was only 10,000 tons; in 1830, 30,000; and in 1840, 50,000—estimating in round numbers. By the compound operation, of emigrants to a continually increasing extent, becoming producers instead of consumers, the following has been the increase of steamboat tonnage, as exhibited by the treasury department: in 1842, the amount was 126,278 tons; in 1843, 134,600 tons; in 1844, 144,150 tons, and 686 steamboats; in 1845, 159,713 tons, and 789 steamboats; in 1846, 249,054 tons, and 1,190 steamboats. In 1847 the tonnage fell back, because the enormous increase in 1846 overwent the demand. But, doubtless, in 1848, the usual rate of progression will continue. (The experience of the writer satisfies him, that the present tonnage does not equal the demand.)

Taking, then, the amount of 1846, as sufficing for 1847, we have

an increase, in seven years, from 50,000 to 249,000 tons. Nearly five times, in 1847, the tonnage of 1840, or over 71 per cent. per annum of increase, with a gaining ratio every year. The first year's increase after 1842 being, in round numbers, 8,000 tons; 2d, 10,000; 3d, 16,000; 4th, dividing the increase between 1846 and 1847, 30,000, and 1847, 60,000 tons. Carry on this increase in the same ratio, and what would it be by 1860? Certainly not under an average of 100,000 tons per annum. In 1860, estimating the tonnage of steamboats at 210 tons average, as above, and the total number of boats required would be over 7,000. Incredible as the amount may appear, it is not as much so as at first it would seem; because the actual population will not be far from trebling itself by that time, which would give about half said estimate—say about 3,500 boats, if the tonnage increased only in proportion to the increase of population. But, by the compounding process aforesaid, that increase will double the ratio of the increase of population, and bring it to the foregoing figures: provided there be an outward vent for the products of the country. But, as this cannot be hoped for, in proportion to the want of such vent, said amount of tonnage must be diminished, except so far as the same is engaged in the interior trade of the country. This is estimated to be fully one-half, which would give 3,500 boats; and, if we deduct one-half for diminution in outward demand, in proportion to the ratio of increase, we have 1,750 for that branch, or a total of 5,250 boats in 1860. But, as the regular progression of increase is to be diminished by the want of a market for the products of the country, what is to be the effect of a continued over-production? Certainly to reduce agricultural labor to the very lowest mark at which man will be willing to render his services; which will reduce the value of agricultural products to less than half the value in the west, of what they are in the eastern States—a condition of things almost existing now. The whole expenses of the west will be scaled down to half of what they are in the eastern States. Labor will be at half price, because it will seek employment at what it can get; and half eastern prices will be a fair remuneration, since those prices will purchase as much in the west, as full prices in the east. This state of things will necessarily transfer the business of manufacturing from the east to the west, for the double reason that labor will ultimately be had cheaper in the west; and because the raw material is produced there, where three-fourths of the demand for manufactures exist, or will exist by the year 1860. Western merchants now estimate ten per cent. on cost, as the expense of getting cotton goods from the east to the west.

Add five per cent. for the cost of getting the raw material from the west to the east, and you have a difference of fifteen per cent. on the value of goods, in favor of manufacturing in the west, even if labor be at the same price. At present, labor may be considered higher in the west than in the east. But that state of things must necessarily end very soon, when the west will have it one-third less than it is on the other side of the mountains. Destiny points to all those results as certain and inevitable. The man of prudence and forethought will look to them as such, and lay his plans for the future with an eye to that event. The opponents of manufacturing in the west, tell us that

land is too cheap yet. That, where homes can be had on such easy terms, labor will not go into the factories.

This is all a mistake, as demonstrated by experiment. But, reason is against such an hypothesis. Labor will seek the most profitable employment, wherever to be found. Let us, then, take the usual employment of agricultural labor in the west—say half a crop of corn and half a crop of tobacco—and compare it with manufacturing labor.

COMPARATIVE VALUE OF AGRICULTURAL AND MANUFACTURING LABOR, TO THE OPERATIVE, IN THE WEST.

15 acres of land, in corn—40 bushels per acre—600, at 20c. -		$120
2 acres tobacco—800 lbs. per acre—1,600, at 3c. - - -		48
Charges,		$168
Board of laborer, $50—washing, $5, - - - - -	$55	
Keeping horse, - - - - - - - -	25	
Wear and tear of horse and gear, - - - - -	10	
Use of implements, - - - - - - -	5—	95
Clear profit of labor of one hand, per annum, - -		$73

Bah! will say nine men out of ten at this calculation. But where is it wrong? It is wrong by about fifty per cent. too much of the nett savings of an agriculturalist. But, to strengthen my argument, I yield all I can in his favor—$25, in lieu of $73, would be about right. Now, to test it, take any ten families in any neighborhood of a newly settled country, and see if, for five years, they average more. They raise vegetables to aid the board, the horse has grass in the common to help support him. The farmer has some hogs that run in the woods and eat the mast. All which helps, and may be said, to diminish the above charges. But this will be the case only a few years; and actual experiment will show that the foregoing is a reasonable estimate. A higher price will be claimed for corn and tobacco. Deduct the cost of hogshead, hauling to market, and expenses not here estimated, and it will be found reasonable. I will be told, a man can do more work than I have allowed. I have known industrious men to cultivate twenty acres of corn, and two of tobacco—but not one man in ten does it—and the above is fully equal to the average product of agricultural labor in the west, strange as it may seem. We will test it in another way. Suppose the females, and children, earn enough to pay their expenses—which seldom is the case, however—then the earnings of the adult laborer, above what he consumes at home, ought to be so much for export. The exports from the whole west, to New Orleans, are now estimated at $90,000,000. Half or three-fifths of this may be credited to cotton and sugar, the producers of which chiefly rely on the west for provisions. Half, then, may be considered exported by one-fourth of the western population, (classing all residents in the Mississippi valley as of the west,) leaving one-half as the product of three-fourths of the population—say $45,000,000 for 7,500,000 people. Call one-fifth the producing class, and you have 2,500,000 laborers to

divide $45,000,000, or less than $20 each. But allow one-fourth of said fifth to be idlers, or non-producers, and you will have only one-third of my estimate. If this estimate be applied to the population of any western country, which is exclusively agricultural, and where labor is not economised and used to the best advantage, I think you will find that the aggregate average will hardly exceed $25 clear compensation per hand, per annum, for labor, after deducting all expenses, in lieu of $73. Now let us contrast the compensation for manufacturing with this.

I have averaged families at five, one of whom is, in agriculture, a producer, the balance by their labor, merely paying expenses. Now for manufacturing.

Compensation for manufacturing labor in the west, of five in a family: the husband will form a hand worth, according to eastern estimates, 80 cents per day, or per week, $4 80. Let us suppose his lost time will bring it down to - - - - $4 00
One daughter by said estimates, - - - 3 00——$7 00

Which, per annum, would be, - - - - - - $364 00
Deduct board and washing, as estimated for farming, - 110 00

$254 00

I presume the mother and two children, by the aid of said $110, and their labor towards furnishing board, will pay their own expenses. Now, here is $254 against $75; over three to one in favor of manufactures against agriculture. But let us take a family where there are four daughters able to earn $3 per week, as I have known to be the case. Here a poor family would, from those daughters, add $600 per annum to their income. Without the factory, in lieu of adding any thing, they would be a weight upon the father. I do not say all girls will earn $3 per week in a factory; some training is first necessary. But I have known weavers in ours, to earn $4 50.

The great advantage of manufacturing to the west will be, that the labor is of a kind that would be almost entirely unproductive, in agriculture. Its products will, therefore, be in a manner, a clear national gain to us. No one can examine this subject, without being satisfied, that where the raw material is to be found, with provisions and clothing, at the cheapest rate, all in connection, and furnished by the region of country which gives also the market for the manufactured article, that the Western States of America are, in time, emphatically to be the manufacturing region of the world. Here nature, in a happy humor, has furnished interminable beds of coal, equally extensive beds of iron ore, copper and lead; the finest sand for glass, and clays for earthen and stone ware, and china. A climate and soil for silk and wine, cotton and wool. Indeed, for every article which the wants of man call for, inviting his ingenuity and enterprise to call them forth.

In the early settlement of any country, labor is employed always in the simplest manner, to furnish food, and the plainest apparel. For a long time after this state of things should cease, it still continues; because all changes are matters of experiment, the success of which is doubtful; and a primitive people are averse to such experiments. But this primitive condition has now continued, until the west has suddenly

acquired the largest portion of our population. Yet, if but in its infancy in years, it has reached manhood in strength, and with a giant stride is still progressing onward. A favorite expression with the sceptical in regard to improvements in the west is: "Oh! it is in advance of the age." Of what age? If of to-day, to-morrow is another age. Nothing can be in advance of the age in the west; for she travels so rapidly onward, that if a project were in advance of the age when commenced, ten to one, before it is finished, the age will be in advance of it; and the plans adopted to carry it out, or on which it is founded, will become obsolete and be exploded. That region which was not ripe for manufacturing last year, is fully so this. The tide of improvement is so rapidly rising, that annually the waves have so far over-lapped each other, as to make continued changes in the character of the country, and to require a change in the pursuits of the people. What a few years since seemed reasonable and proper, now strikes us with amazement, (that is,) the freighting of iron, sand, clay, cotton, &c., past the coal mines on the lower Ohio, to be manufactured at Wheeling and Pittsburgh, encountering the heavy expense of lockage at Louisville, besides a needless transportation of 8 or 900 miles, up stream, and the manufactured articles, to a great extent, back again—making a total of 1,800 miles of needless navigation, besides the lockage aforesaid, to reach the points where manufacturing first dawned in the west, and has acquired a stable footing. In Cincinnati, to be sure, as well as in Louisville, the manufacture of engines is now carried on very largely, as well as other branches in the iron way. But in cotton and wool, they are comparatively doing nothing. There is one factory of cotton in Cincinnati, of about ten thousand spindles, and one smaller one in Louisville of perhaps, one or two thousand, but no looms, and those at Cincinnati and Louisville have only come into existence within a few years. There are several other establishments at other points, but not below Louisville, on the Ohio, until you come to Bon Harbor, where there has been erected a very fine establishment, calculated to run seven thousand spindles, which commenced operations less than one year ago, upon two thousand, designing to increase the amount, as operatives are taught from the neighborhood, until the whole building is filled. This is one of the finest establishments, and best constructed buildings in the west for its extent, and where the coal mines are of as great extent and the vein of coal thicker than any where below the falls, on the Ohio. Besides which, it has the Cannelton coal vein under the one now being mined, giving a double resource, and the quality of coal exceeded by no other for generating steam. Stimulated by the example at Bon Harbor, there has at Cannelton, been a company formed, to build a factory of 10,000 spindles; and as the stockholders are men of intelligence and enterprise, they will doubtless push it on to completion with vigor, and for their public spirit will deserve success.

I was struck with the account of the boot and shoe manufacture in Massachusetts alone, which is estimated to amount annually to fifteen millions of dollars. Where do they get the hides to manufacture the leather?—for no leather goes east from the west, but much comes the other way—mostly from the west. Where do they get the bark? Much

from the west. Where the provisions to feed the manufacturers? Most of it from the west. Where do they find a market for those boots and shoes? Chiefly in the west!! Now, with provisions a drug, paying almost nothing for labor, because of the expense of getting them to the manufacturers, who are our consumers, and with the price of manufactures enhanced by the cost of transporting the raw material from our doors to them, and their fabric back again to us—are we to hear with patience the cry that we are in advance of the age, when we advocate the plan of bringing the manufacturer to the consumer, and where he finds the power, the material, the provision, and all expenses at half eastern prices? This is, to be sure, the doctrine (intended for foreign consumption) which is thrown out from English schools of political economy for our benefit; but I must confess I think they pay a poor compliment to our sagacity in supposing the American people can long be duped by it. I think the day for such notions is passing by, and a new era is dawing upon us. But the same reasoning which has been heretofore used with such justice and effect to transfer manufacturing from Europe to the Atlantic States, will as emphatically operate to transfer them from the Atlantic to the west. The day is now at hand. It has commenced some years ago at Pittsburgh and Wheeling, and has made Pittsburgh among the first cities of the Union —the fifth in population compared with the Atlantic cities, and the fourth compared with the Western; yet not very far behind any one of the latter. And whence comes her importance? Certainly from manufacturing; for her commerce disconnected from her coal and manufactures, is of small importance. But in making the stride to Pittsburgh and Wheeling, manufactures only reached the half-way ground to the west. They have only, therefore, realized half the advantages of bringing the manufacturer to the raw material and the power.

When Cincinnati took hold as she did in the iron line, many years ago, this was a step still further towards the raw material, which comes chiefly from the Cumberland river, Green river, Salt river, the Tennessee and Missouri, though much from Ohio at Hanging Rock. But while manufactures approached the raw material here, they were leaving the power; for they were dependent upon Pittsburgh and intermediate points for their coal, and the writer witnessed in Cincinnati only a few weeks since, a very serious evil growing out of this drawback. The river being low, the supply of coal was short and very high, and that being about the 1st of December, a freeze might be very naturally apprehended. If it had taken place and continued until spring, which might have happened, not only would the manufactories have been stopped, but great distress would have pervaded the city. I witnessed also considerable sales of cotton there at fully three-quarters of a cent above the highest price paid at Bon Harbor, and a full cent above much which was purchased there. I asked the reason, and was answered, it was caused by the low water. Here a double evil arises from low water, to a point which is dependent on other places for raw material and power. Where then, I may be asked, is the proper point for manufacturing to the greatest advantage, on this American continent? I would answer: If the raw material, the power,

cheap living, and health could be all concentrated at the geographical centre of the Union, upon open and constant navigation, that would be the point. And where is that? Lieut. Maury has fixed upon two; one at Memphis, the other on the Ohio, between Louisville and the mouth. If Memphis had the power and the health, that would be the point; but it has neither. Where is the next point then? I answer, where the power and health exist nearest to the raw material—or, rather, where access to the raw material would be equally certain and cheap. This would be anywhere below the falls of the Ohio, or on the upper Mississippi, between St. Louis and the mouth of the Ohio, where coal and health can be found. Better removed from a large city, than in one, unless it be a manufacturing city. Better in the latter, because all manufactories suceeed best in communities, or families, as there will necessarily be an emulation which excites to improvement; and as there will be wants common to all, the supplying of which will weigh too heavily on a single establishment. But, a few cotton factories, in a large commercial city, will encounter obstacles greater than the same number out of one. The machine shops for other establishments, are of no value to a cotton factory, as they cannot make cotton machinery. The factories must be, then, provided, so as not to rely on them. The evils, on the other hand, are very great. If your laborers choose to leave you, they can always find employment in other branches. Besides which, house rent, fuel, and all the expenses in every branch in a city, are so much higher than in an ordinary manufacturing town, that the wages must be necessarily higher.

An illustration of this occurred to the writer. He had a superintendent of looms to whom he gave one dollar and fifty cents per day. This superintendent was offered two dollars per day to go to Louisville. He accepted the offer, but in time re-appeared at Bon Harbor to ask employment. Being told that he must have deceived us about getting two dollars, he satisfied us of the fact, but said he found from sad experience that he could not save as much out of two dollars in Louisville, as he could out of one dollar and a half at Bon Harbor. I have noted the controversy upon this subject, in the Louisville papers, but a few facts are worth many speculations. For a long time, there has been one cotton factory in Louisville. That there has not been a second, is pretty strong evidence against the success of that one.

The one at Bon Harbor has not been in operation twelve months, and as yet, has not one-third of the machinery which it is capable of operating, because the owners prefer progressing slowly, filling up as they train operatives, and as they feel their way with safety. Upon this, less than one-third of the machinery which will be used, falls the chief expense for operating the whole; and yet the business is beginning to pay well, even now, though hardly seasoned in its work. Though a business, begun in a new region, and where every thing in regard to it is new, may, when seasoned to its operations, and when it has overcome the difficulties incident to all new undertakings, become profitable, yet it is seldom so in the outset; and hence, a great majority of pioneers in any business fail. Those reasons ought especially to have weighed against us, because we commenced when the business

was declining. But now, while it is under the greatest depression, and many establishments at the east have failed, and while the heaviest expense of getting 7,000 spindles under way, has fallen on 2,000, we think we are making interest on the whole investment. What may be expected then, when our house is filled? I answer, the full realization of all the advantages of being in the geographical centre of our country, upon navigation which, at twenty-five cents per hundred will give us choice of markets, among the twelve millions of inhabitants that will occupy the Mississippi Valley by 1850, within two days run of the cotton market, which supplies Pittsburgh and Lowell, and from which freights on cotton are but 20 cents per hundred, and ought to be but 10. Where coal of the first quality exists in a thicker vein, than any where below the falls, on the Ohio, with the Cannelton vein still under it. Where our good health is unsurpassed by any point on the Ohio, as our physicians', and other certificates will evidence. Where provisions, as well as all the necessaries of life, are as cheap as they can be found any where in America; and where you could not well add to our advantages, unless you would put the cotton along side of us, which would only save 1-5th of a cent per lb., being 1-15th of a cent per yard, on the goods manufactured; a saving which is hardly worth estimating. I was requested, in Memphis, to answer a query: "Would it not be best to manufacture at Memphis, where the cotton was?" I replied, I would give some data for the querist to answer himself. To manufacture 2,000 pounds of cotton per day, it would require about 100 bushels of coal, weighing about 8,000 pounds. If you had better move 8,000 pounds to the 2,000, than the 2,000 to the 8,000, then it would be best. If, also, provisions were cheaper in Memphis, and health better at that point than where the coal was to be had, it would be best, but not otherwise.

As to relying on Pittsburgh for supplies of coal to manufacture above the falls, the following paragraph, from the *Louisville Journal*, will show an accumulation of six nundred coal boats at Pittsburgh, at one time, averaging, as we all know, fully seven thousand bushels, making a total of 4,200,0000 bushels, which the wants of the country below required, and for want of which, great inconvenience was felt. Before this rise, which was not looked for, about the 1st December, in Cincinnati coal was very high, and a freeze was anticipated. Had it set in, what would have been the consequences? It is a very general occurrence, that coal becomes high at all the lower towns in winter, often rising to 25, 30, and as high as 37½ cents sometimes. A coal mine is the only place where you can never be disappointed as to fuel.

"PITTSBURGH, December 8th—8 P. M.

There are 10½ feet water in the channel, and rising. The weather is warm. Three hundred pair of coal boats have left during the present rise. Lumber is expected down the Allegheny to-night."

A great manufacturing town must arise on the Ohio, below the falls, where there is good health, towards the middle of the coal field where the supply can never be exhausted, and where the goegraphical position commands a great extent of interior country, guarantying always ample supplies of provisions, and a commercial trade with the inte-

rior. This fact must be clear and palpable to any man of observation, for such a point will have ten times the resources of Lowell.

ACCOUNT OF BON HARBOR.

A perpetual charter attaches to this place, with mining and manufacturing privileges. Capital, $500,000.

This tract of land contains two thousand acres, binding two miles on the Ohio—the upper part having a rock-bound shore, against which the current sweeps round in the bend of the river, (Bon Harbor being on the convex side,) and about midway of the tract is thrown off towards the opposite side of the river, clearing the landing below of driftwood, floating ice, &c. Hence the name. This rock forms a fine natural wharf; and, immediately below it, a ship-of-the-line would float at the lowest stage of water. There could not be a finer point for ship building. The level bottom, above high water mark, except a portion which was covered by the floods of 1832 and 1847, is about half a mile wide, affording a beautiful site for a town. Then set in the coal hills, which run about a mile and a half back, and from the upper to the lower end of the tract—all, however, included in tne Bon Harbor survey, except a small portion upon which the coal right has been secured—including, in all, from 800 to 1,000 acres of the upper vein of coal. But the Cannelton, or Hawesville vein, pervades the whole tract, according to the geological report of Professor Lawrence. The upper vein, where we are now mining, is upwards of five feet thick, without slate, and of superior quality for generating steam, or for parlor use, being all of uniform quality. The vein was not so thick until we penetrated a good way in, varying from 4½ to 5 feet—perhaps it would be safe to say averaging 4½ feet. The coal burns with a clear, brilliant flame—is durable—yields but little dust, and dirties a house less than any bituminous coal I know of. The annexed certificates, however, will shew its quality. There is a railroad running from the river to the mines, and into them, as the coal lies nearly horizontal in the hills, and the cars go to, and are filled by, the diggers. The steamboat demand has, heretofore, taken all the coal which could be delivered, except the home and Owensboro' demand. The opening in the mines, however, within the last year, has been so much extended, that soon almost any quantity can be supplied. The flat-boat demand, which is very great, has heretofore been neglected, because it could not be met. At this time, the miners are delivering 1,500 bushels per day, and during the year may possibly reach double that amount, if the demand justifies, of which there cannot be much doubt, as we see an account of 600 flat-boats leaving Pittsburgh on one rise of water; and, as those boats average fully 7,000, here are upwards of 4,000,000 of bushels from about 800 miles above us, having also the falls to pass, or toll to pay at the canal.

During much of the year, coal cannot come down from the Pittsburgh region, at which time, the mines on the lower Ohio, must monopolise the lower trade. At this time the number of steamboats on the western waters, are estimated at about 1200, and increasing at a most incredible rate, showing upon data heretofore given, that by

1860, the number will probably reach five thousand. Estimating the consumption of coal, which by that time must be the general fuel, at 200 bushels each per day, the total would be one million bushels per day, from which fact may be estimated the coming consequence of the coal trade. Add to this the consumption of the sugar planters, whose fuel must soon be coal, as also the tow-boats, steam ships, cotton presses, manufactories of all kinds, the demand for the lower towns, and the estimate would seem to exceed any supply which could be obtained. But when it is estimated what an enormous quantity of coal comes from a single acre of one vein, and that there are many veins except on the outer verge of the coal field, and it will be seen that the supplies can be obtained, let the demand go to what it may. Thus much for the coal trade; from which some idea may be formed of the Bon Harbor coal mines for mining purposes. We will now glance at its manufacturing importance.

The Bon Harbor cotton factory is designed to accommodate 7,000 spindles, and with an additional room to be built, looms to weave up all the yarns. The present room will suffice for the said number of spindles and one hundred looms. The building is constructed with such a thickness of wall, and of floors, that it is intended the jar of machinery shall not be felt. The roof is of slate, lower shutters and doors are of iron; heated by steam; not a fire-place or stove within the factory; the engine house so far fire proof, that if all the fire in the furnace was scattered over the floor, which is of brick, it could hurt nothing.

Cisterns in the attic story, have copper pipes leading down to the ground floor, with cocks and connecting hose for every story, so that any part of the building can, in a few moments be flooded. The picker house is so constructed that it might burn down without burning the main building, but could not well burn, if water would save it. We have as yet, only 2,000 spindles in operation, intending to increase as operatives are learnt. More machinery is already ordered. We have not yet been in operation quite twelve months, weaving; but see enough to satisfy us that our best hopes will be realized, and that we have fully twenty-five per cent. advantage over eastern manufacturers in cost of the goods.

Believing that such establishments thrive best in communities, we shall offer liberal inducements for others to locate along side of us. We have already bargained for a lot for a foundry, and have been spoken to for others for a glass and axe manufactory, which we expect will be established here. We have in operation a very fine saw mill, capable of turning out, and which does turn out, between five and seven thousand feet of lumber per day.

We have the machinery for a flour mill and all the wood work framed, ready to go up, as also apparatus for kiln-drying corn meal; which is intended to be in operation for the next crop.

Connected with the factory is a corn mill, which now does the business of the place and neighborhood.

We have a store and smith's shop. There are five carpenters, who have purchased and built, besides others who are at work here, in addition to various other mechanics. A wharf boat, and general

appliances for a business place, with a rapidly growing village, owned by the firm, except where mechanics have purchased and built; no lots being sold, except to workmen.

The plan of the Bon Harbor company, is to invite enterprise by all convenient means, and the following branches could not fail to do well:

A rolling mill; because the pigs go chiefly by our doors, to be manufactured at Pittsburgh and Wheeling, and much of it returned to us. A nail factory, for the same reason; and because, by the statement annexed, it will be seen that one which has been in operation about a year, in Wheeling, is estimated to be clearing twenty-five per cent; as evidence of the truth of which, I was told, while lately there, that one stockholder to the amount of $10,000 had sold out for $17,000, and another of $14,000, had refused $27,000. A wagon, cart, and plough factory, because these articles give employment to a large amount of capital, and a vast number of hands, at Wheeling and Pittsburgh, where timber is much higher than here, and inferior in quality; and those places find their chief market on the Mississippi, below us.

Glass factory; because sand, used at Wheeling and Pittsburgh, goes from below us to be manufactured there. Cotton, for the same reason.

Tannery, and shoe and boot making; because the hides go with the bark to New England from our very doors, and come back to us made up, and our food goes there to feed the workmen. Saddlery ditto. Stone and crockery ware, because we have fine clays for the purpose. Hats, because we have the furs and steam cheap. Woolen factory, being near the wool growing country. Coopers, because of abundant stave timber. Engine shops, because soon engines will be wanting for every branch of business, and especially for steamboats to be built here. Ship yards, because no where in the west can ship timber be found in greater abundance, of better quality, or cheaper, and no where better ground for building on, or deeper water for launching.

And that is not all: when ships are ready for departure here, cargoes of tobacco could always be had, as this is the centre of the great western tobacco region. Besides what is made on the Ohio, it is estimated that sixteen thousand hogsheads come annually out of Green river, most of which would be shipped directly for England, at a freight equalling that to New Orleans, added to that thence to England, as thereby the shipper would save the landing at New Orleans, drayage, inspection, cooperage, forwarding commission, and a great amount of other charges; and here could be manufactured sails, rigging, and every want of a sail or steam ship. I predict that this will be a great ship building point, at some future day, not very far distant.

COMMERCIAL POSITION OF BON HARBOR.

It is on an outer bend of the Ohio, within eight miles of Green river, to which a railroad can be made over a perfectly level country; but, by taking this road to Ramsey, above Lock and Dam No. 2, over a country nearly as level, and only twenty-two miles distant, one lock additional is avoided, and that point is sixty-two miles from the mouth of Green river.

As the boats navigating Green river are too small to trade to New Orleans—and as, in no event, could they compete in that trade with the large Cincinnati and Louisville boats, because of the greater profit from passengers than freight—and passengers bound further up than Green river, would not, of course, go on a Green river boat; for these reasons, there must be a depot on the Ohio for the Green river trade, and that depot must be in Kentucky, for the citizens, not being able to carry their servants to Indiana, will do their trading on their own side of the river. The laws, manners, and customs of the people, all would tend to produce this state of things. The mouth of Green river is too deeply flooded to admit of such a depot. It must be above the mouth of Green river, because nine-tenths of all the intercourse of the citizens of the Green river country is with Louisville, for trading purposes; and the packets all run above, except one gotten up by the citizens of Henderson, below, for the advantage of that place; but, for the reasons stated, it must compete to disadvantage with the packets trading above; and Bon Harbor, being the first point in Kentucky which is not overflown in high water, must be the commercial depot for Green river, even if the trade comes round by water, for it is preposterous to suppose the present trade to New Orleans, by way of Louisville, can continue from Green river, since the distance from the mouth of Green river to Louisville is near two hundred miles up stream.

But with a good railroad from Bon Harbor to Ramsey, the trade could be landed at the latter point, and brought over the road in one hour, for less cost than it could be drayed to the warehouses in Louisville; or even from the water's edge to the warehouses in Bon Harbor. It is evident, then, that Ramsey must be the discharging and receiving point for the trade of Green river, by which means the distance of about one hundred miles round by water, to Bon Harbor, as well as the passage of locks No. 1 and 2, will be saved; and the saving, over sending the trade to Louisville, and thence back to New Orleens, will be fully four hundred and forty miles of useless transportation. I think this should suffice to settle the question, that the trade must ultimately take this course. But an additional reason will be found, in the fact, that the Georgia and South Carolina railroad is progressing rapidly to Nashville. Soon it will be there, and to connect with Louisville will be the next step in the natural course of things. To do so, it must pass over the slack water navigation of Green river, and within twelve hours run of a steamboat, from Ramsey—say thirteen from Bon Harbor. But one great benefit to Louisville, from this road, would be the supplies of coal which it might be made to command, by bending down to dam No. 3, and crossing at the mouth of Muddy river. The citizens of Russelsville, and Logan county, I understand, already contemplate a railroad from Russelsville, down Muddy, to Green river, thirty-five miles. This would form part of the great Nashville and Louisville line. In that event, boats would connect the two lines at dams No. 2 and 3—running in the intervening basin, and passing no lock, and in about three or four hour's time. Now, while the travel destined for upper Kentucky and Ohio, from this southern road, would go to Louisville, that for lower Indiana, Illinois,

Wisconsin, Missouri, Iowa, and the lake region would go by Bon Harbor—returning ditto—and so of freights. When this southern road reaches Nashville, fifty miles more will bring it to Russellsville, or sixty to Bowling-Green, on the slack water of Green river, and very soon it might thus communicate with the Ohio. To be sure, it would do so by means of the Cumberland, while the water was in boating stage—but it is too much interrupted to be relied on—and while Bon Harbor could be reached in twenty-four hours from Nashville, by way of the road and Green river, it would require sixty hours by way of the Cumberland, even when the river is in good boating order. All the advantages here claimed for Bon Harbor, will also apply to Owensboro', which is near by, (wanting the coal however,) and in time, will doubtless form, with Bon Harbor, one town.

I could expand much upon the trade which could be brought to Bon Harbor, but feel conscious that I have perhaps already overgone the limits you intended me to occupy, and that I should close.

Yours very respectfully,

ROBERT TRIPLETT.

The annexed certificates as will be seen by the date, were given some years ago. The Bon Harbor coal has been constantly improving since, as will be seen by those that follow:

ON BOARD STEAMBOAT JUNIATA, AUGUST 15, 1842.

Capts. Jones and Thacker: As I am anxious to make known the quality of my coal to captains of steamboats and others, and as you have both tried it, you will oblige me by saying how it answers your purpose.

Your obedient servant,

ROBERT TRIPLETT.

I believe it is equal to any coal that I have ever tried for steamboat use, and I except none. RESIN JONES.

I agree with Captain Jones, and think it superior to the Pittsburgh coal.

H. S. THACKER.

To similar inquiries a few years ago, the following answers were given in 1838:

My opinion of the above coal is that it is equal, if not superior, to any coal I have ever used. EDWARD WILLIAMS.

I am now using the Bon Harbor coal, and think it superior to any I have ever used for grates. I used the Richmond coal for twenty years, and consider the Bon Harbor coal much the best. PETER F. SMITH.

I have burnt the Bon Harbor coal two years, and have no hesitation in saying it burns equal to any I ever used. D. MORTON.

OWENSBORO', December 20th, 1848.

To Robert Triplett, Esq.: The undersigned answer your interrogatories as to the coal from Bon Harbor, that from our use of it we consider it preferable to any

we have ever used, or seen used, for grate purposes, from its entire want of slate, and leaving a smaller residuum than any we have tried or seen used. It burns brilliantly, gives a fine light, and makes but little dust. We also have noticed a continual improvement in its quality, as the seam is further opened.

We have also observed that it is getting into general use by the steamboats on the Ohio river, and in every instance, they appear to approve of it for fuel.

J. H. BLAIR,
W. B. TYLER,
S. M. WING,
PHILIP TRIPLETT.

WHEELING, November 28, 1848.

MR. E. W. STEPHENS—*Dear Sir:* If agreeable, I would be glad to have the following queries answered in regard to work done at your nail factory, which, I understand, embraces all modern improvements:

1st. What quantity of pig iron do you use per week? 2d. Quantity of nails made per week? 3d. Quantity of coal used per week? 4th. Number of hands and weekly pay roll? 5th. Wholesale prices of nails? 6th. Capital invested? 7th. Dividend per annum?

Yours respectfully,
ROBERT TRIPLETT.

To which Mr. Stephens answers, as to the 1st. Fifty tons. 2d. 1,000 kegs, (100 pounds each.) 3d. 3,000 bushels. 4th. 150 hands, and $1,000 pay roll. 5th. Average $4 per keg. 6th. $100,000. 7th. 25 per cent.

OWENSBORO', 31st December, 1848.

Gentlemen: To complete my answer to queries from the Western Journal of Agriculture, Commerce, and Manufactures, it is necessary to have information as to the health of Bon Harbor. As you have practiced there for years past, I ask the favor of your opinion on the subject. Very respectfully,

ROBERT TRIPLETT.

To Drs. R. W. MURRAY and WM. H. HOWARD.

OWENSBORO', 1st January, 1849.

MR. TRIPLETT—*Dear Sir:* In reply to your note we can state, that from experience based on our practice at Bon Harbor for a number of years, upon the operatives, we consider it more healthy than any part of the county of Daviess.

As to the future, we think there will be less disease than in times past, judging from the progress of improvements there, in clearing out the timber, building comfortable houses, &c., and from the natural location, there seems very little cause for disease, after this. Respectfully yours,

(Signed,) R. W. MURRAY,
W. H. HOWARD.

ART. III.—COMMERCE OF THE EAST—NO. IV.

PACIFIC RAILWAY.

Railway across the Isthmus—Schemes for Pacific Railway—Maury—Whitney—Examination of the route proposed by Lt. Maury—Ibid of route proposed by Mr. Whitney—A new route proposed—Topographically described—Superiority of new route—1. Does not invade a sovereign State. 2. Does not cross as many streams. 3. Passes through more fertile land. 4. Preferred because of necessity of uniting us to California. 5. Because it is cheaper. 6. Preferable because shorter. 7. Because the gold of California will pay for it. 8. Because materials on it are more abundant. 9. Because more direct as respects our great cities. Distances from Memphis, St. Louis and Prairie du Chien to China—Connections of new route better.

Since the last number of the Western Journal was published, some facts have transpired which it is deemed necessary to notice before we proceed to our promised examination of the several projects for a railway across the continent. Soon after the administration of Mr. Polk came into power, the Secretary of State, Mr. Buchanan, instructed Mr. Bidlack, our Charge d'Affaires to New Grenada, to secure, if possible, all advantages which might arise from any road or canal in progress, or contemplated, across the Isthmus of Panama. In that effort, our government was entirely successful, and by a treaty under date of June 10th, 1848, our government guarantees the neutrality of the Isthmus, and thus perfectly secures any capital or property of our citizens which may be invested in the construction of such works.

Under an act of Congress of the 3d March, 1847, the United States have entered into contracts for the transportation of the mails to California, Oregon and the Pacific. The contract from Panama to Oregon and California, has been taken by Mr. Wm. H. Aspinwall, of New York, and steamships have been constructed and are now in the performance of this duty. But Mr. Aspinwall had yet a higher ambition—to construct a railway from the mouth of Chagres river on the Atlantic to the harbor of Panama on the Pacific coast. Finding that a privilege of this character had already been conferred upon a French company, he awaited until the period for commencing the work on their part had expired, and then promptly renewed his exertions. By a regulation with Gen. Herran, the Minister of New Grenada at Washington, duly empowered, the right to construct a railroad has been secured by Mr. Aspinwall and his associates. The grant to the company is limited to ninety-nine years, and gives the following advantages:

1. An exclusive right of way across the Isthmus, with the right to use gratuitously, all the public lands lying on the route.

2. An absolute gift of 300,000 acres of public lands, to be selected by the company.

3. All the materials used for the road, as well as effects of the persons employed, are declared free of duty.

4. Two points, one on the Atlantic and one on the Pacific Ocean, the termini of the road, are declared free ports.

Having secured this grant, the company have applied to Congress to enter into a contract with them for the transportation of the mails,

public agents, troops, arms, and munitions of war, at a certain sum to be paid when the road is finished and open for travel. They solicit no grant of money or other aid. It is presumed Congress will not hesitate to comply with the request, and pass the bill now introduced by Col. Benton, in substance.

In a former article it was shown that the route through the Isthmus from London to Canton was 728 miles farther than the one at present in use, during the season of the southwest monsoon, and 2,388 miles farther during the southeast monsoon; and that, therefore, a canal would be of no permanent importance, at least as far as Europe was concerned; but this calculation was made for sail vessels. If a line of steamships should be placed upon the Pacific, to run from the Bay of Francisco to Shanghae, in connection with the present lines to the Isthmus, the voyage from Canton to New York may be made in about sixty-four days, and to England in about seventy-six days. In speed, this is certainly a great advance, but when the expense of steam vessels is taken into consideration, together with the cost of transportation and trans-shipment across the Isthmus, it may be questioned whether the course of the trade to the East Indies will be revolutionized, farther than as respects passengers and very light articles. One thing is certain, that this new arrangement, (as will be shown hereafter,) can in no wise diminish the importance and usefulness of a railway across the continent.

Out of several schemes for connecting the Atlantic and the Pacific through the interior of the continent, only two of them need be examined in detail. The plan of Professor Forshey, for railway communication from Vicksburg to Mazatlan, has the insuperable difficulty of proposing a road through foreign territory, and territory belonging to a people upon whom no reliance can be placed for the observance of treaty stipulations; and other schemes have been suggested by persons wholly ignorant of the subject. The two plans which have attracted, and deserve attention and consideration, are those of Lieut. Maury and Mr. Asa Whitney, of New York. That portion of Lieut. Maury's article, which suggests, as an alternative, the improvement of the navigation of the Rio del Norte, and the Rio Gila, with a railway connection between them, we will pass over, as we feel assured that Lieut. Maury, himself, would never have made the suggestion, if he had taken time to ascertain the difficulty and expense of rendering these streams navigable, and the absolute impossibility of uniting them otherwise than by a tunnel through the Rocky Mountains. The expense would exceed that of a railway from the line of the States to Francisco Bay.*

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* The views of our own respected fellow-citizen, and able engineer, W. R. Singleton, are deserving of notice in this connection. He seems to approve, in the main, Lieut. Maury's idea, but suggests that instead of uniting the Del Norte to the Gila, that stream shall be ascended to the Rio Chuna, one of its branches, and from thence a connection made with the Jaquesda, a branch of the Colorado. The writer has great confidence in the judgment and intelligence of Mr. Singleton in cases where he has made it his business to examine a subject in detail, but he thinks the facts herein collected will convince him not only of the practicability, but the utility and cheapness of a railway the entire route.

In a letter of January, 1848, addressed by Lieut. Maury to the Hon. T. Butler King, he has corrected an important error committed by all who had hitherto speculated upon the subject of commerce across the Pacific. The world, generally, form their ideas of distances, from *maps*, instead of *globes*, and in consequence of this fact, the prevalent opinion formerly was, that the shortest distance from the western coast of America, to China, was by way of the Sandwich Islands. This view was held so recently as in the memorial of Wilkes, and others, in 1847, to Congress, in favor of a railway to the Pacific. This radical error Lieut. Maury has had the honor of correcting. Proceeding upon the well known scientific fact, that the shortest distance between any two points upon a sphere, is along the arc of the great circle in the plane of which they are situated, he has discovered that a great circle from Panama to Shanghae, in China, instead of passing the Sandwich Islands, will pass up through the Gulf of Mexico, and the State of Louisiana, and thence through Oregon, and the Fox or Aleutian Islands. The distance from Panama to Shanghae, by this route, is 8,200 miles, or 1,200 less than by way of the Sandwich Islands. A great circle from the southern point of the Peninsula of California, to Shanghae, will pass within a few leagues of Monterey, the Bay of Francisco, and through the Fox Islands.

Now, according to Lieut. Maury, the most direct line for a railway across the continent, to connect with this latter great circle route, is from Memphis to Monterey, a distance, by an air line, of 1,500 miles. "Supposing," says he, "your proposed line of steamers established to China, and a railroad completed to Monterey, the productions and rich merchandise of China and Japan, might be placed in the lap of the great valley of the Mississippi, in thirty days."

"This route has the further advantage of being, at once, the most central and direct route that has ever been proposed from the United States to China. The distance from Memphis, by Monterey and the great circle, is only seven per cent. greater than it is by a 'bee line' drawn through the air from Memphis to Shanghae."

Lieut. Maury then adds: "I wish you to understand that I do not pretend to know anything as to the nature of the ground, or the obstacles in the way, further than what may be gathered from a mere geographical knowledge. San Diego, or San Francisco, may either offer a better terminus for the railroad, than Monterey."

If the continent were a smooth plain from the Mississippi westward, there can be no doubt that the line proposed by Lieut. Maury, would be decidedly preferable to that of Mr. Whitney, and perhaps preferable to any other; but the real practical question is, Where can we the find shortest line to the Pacific, upon which a railroad can be made at the least cost, through a fertile region, and connecting most favorably with the commercial lines of the Union?

The line proposed would cross the St. Francis, the Languille, the Cache, the White, and the Arkansas, with numerous tributaries, through a region of swamps and river bottoms, which annually overflow to the Canadian. Following this stream to its head, it would ascend to the high table lands—pass the Del Norte, and the Sierra Madre, near Albuquerque, south of Santa Fé—thence through one con-

tinued succession of mountains to the Rio Gila—down that stream to its mouth—and lastly, go over another succession of mountains, including the coast range of California, to Monterey. Here we have numerous swamps from Memphis to the Canadian, which would have to be "filled," before the road could be made, and a large number of bridges to be made. After the Canadian is reached, its course must be followed, and it must be crossed and re-crossed sundry times, besides making many "fills," where its waters overflow the bottoms; and, after its source is reached, an ascent, and a sudden one, of 2,000 feet, must be made, to get upon the table lands of New Mexico. This is the testimony of Major Long, of Capt. Pike, of Col. Boone, of Mr. Stanly, and finally of Dr. Gregg.* But this is not all. The Canadian can only be ascended as high as the vicinity of the Angostura, or Narrows. Here the river passes through a *canon.* "We found," says Mr. Gregg, "the point of a table plain projecting abruptly against the river, so as to render it impossible to pass. Ascending the main summit of these craggy promontories, the eastern ridge of the Rocky mountains may be seen." Again Mr. Gregg says: "The Canadian river flows through a *canon*, for a distance of more than fifty miles, throughout the whole extent of which the gorge is utterly impassable for wagons, and almost for horses."

Mr. Stanly, a Santa Fé trader, says, when upon the table land overlooking the river: "The valley below could only be reached by descending a frightful cliff of from 1,200 to 1,500 feet, and very precipitous." How did the Canadian and other streams of New Mexico sink themselves to such immense depths in the "solid rock?" But similar difficulties occur upon the Del Norte, and other streams.† A railroad directly west from Memphis to the Del Norte, may therefore be considered impossible. The question recurs, what route is practicable which will most nearly coincide with the air line of Lieut. Maury? Our own engineer, Mr. Singleton, has, we think, answered this question satisfactorily, as far westward as Santa Fé; and it may be doubted whether an individual more capable of giving the answer is now living. He is fully acquainted with the whole region, and is, moreover, an accomplished engineer. After stating the facts respecting the Canadian river, as herein, he says: "Driven from this route, we must return to Memphis and seek another, against which no objections can be urged. Monterey, on the Pacific, and the north bend of White river, in the State of Missouri, are precisely on the same parallel of 35 deg. 38 min. A great circle passing through Monterey and Memphis, must necessarily pass near Forsythe, and passing down White river, would make that stream its near neighbor in its whole distance to Big Black. That a railroad to Santa Fé must go as far north as the valley of the Osage, I conceive no competent person, acquainted with the nature of the country, will deny; hence we must, from Osceola, follow the valley of the Osage to its head, about fifty miles east of Council Grove, on the traders' route from Independence to Santa Fé." This opinion of Mr. Singleton's, is fortified by a perusal of

* "Commerce of the Plains," and Long and Pike. †Lieut. Abert's survey of N. Mexico.

Long's Expedition, and Featherstonhaugh's Geological Survey of the Ozark Mountains.

The only barometrical observations and profile sections of the route from the Missouri to Santa Fé, are those of Doctor Wislizenus and Major Emory. As the former traveled the usual traders' road we will give from his work some facts respecting the different places upon the route, and follow these with some facts touching the nature of the route from Santa Fé westward to the Pacific, from Emory's Reconnoisance.

Between Pawnee Fork and Little Coon Creek, in a distance of 4¼ miles, there is an ascent of 58 feet to the mile. Near the middle spring of the Cimarone, there is a similar ascent. Between this middle spring and Whetstone Creek, a distance of twelve miles, the ascent is 24 feet per mile. Near the Colorado there is a descent of 65 feet per mile for 13½ miles; and near Santa Fé there is first a descent and then an ascent of near 57 feet to the mile for sixteen miles. The streams to be crossed are Willow creek, Cottonwood creek, the Little Arkansas, Big Crow creek, Walnut creek, Ash creek, Pawnee Fork, Little Coon creek, Arkansas river, Cimarone creek, three branches; Cedar creek, M'Kenzie's creek, Cottonwood branch, Rabbit Ear creek, Rock creek, Whetstone creek, Rio Colorado, Wolf creek, Gallinas creek, and through several bad *canons*.*

The elevation of Santa Fé is 6,846 feet.† From this point General Kearny's party in nineteen days passed over a broken and precipitous region, and descended to 4,138, feet, and in five days more ascended to 6,167 feet. The next day down to 4,587 feet, and thus varying up and down to the Colorado, 176 feet above the sea. Thence between the Colorado and the Pacific over a "pass" 3,050 feet high, and thence immediately down to the Ocean. Take the following results.‡

Sept.	21, in 40 miles,	49½	feet	per	mile.	
"	29, in 46	"	44½	"	"	"
Oct.	17, in 38	"	33	"	"	"
"	20, in 8	"	225	"	"	"
Nov.	1, in 10	"	220	"	"	"
"	6, in 38	"	43	"	"	"

From the Colorado to the Ocean:

Dec.	1, in 15 miles	141½	feet	per	mile.	
"	6, in 10	"	233½	"	"	"

Surely this is enough to prove beyond cavil that if a railroad could be constructed on this route, the expense and labor would be beyond all reasonable bounds. The streams to be passed are various tributaries of the Del Norte, the Del Norte itself, a number of branches of the Colorado and Gila, and the Colorado, with *canons*, precipices and deserts without number. The route followed by Col. Cooke farther south, turns some of the mountains, but is met by the same insuperable difficulties where it strikes the Gila and from thence westward to the ocean.§ Some persons have suggested a direct line from Independence to the Passo del Norte, and thence to the Pacific; but these individuals wholly overlook the fact that the Canadian, the Red, and

* Wislizenus, published by order of the Senate. † Emory. ‡ Emory's Reconnoisance, Tables and Profile Section. § Ibid.

a number of other streams, present impassable chasms, and that this route is liable to the same objections with Emory's, beyond the Sierra Madre.* It should be borne in mind that Major Emory only ascertained the altitude three times in twenty-four hours, and that if he had done so once per hour in passing through one continued mass of tremendous mountains, the result would have been far more appalling.

Mr. Whitney has labored for years in this cause. He has pursued the great purpose with an ardor, an intelligence, and an inflexible resolution, which are deserving of all honor; and he will undoubtedly have his name associated with this most magnificent work, whenever it may be made, and wherever it shall be taken. In venturing, therefore, to question whether he has selected the best route for the work, we would desire to be understood as in no wise depreciating his intelligence and his labors. But that species of information from which we are enabled to select a location for such a work, is most difficult of acquisition by an eastern man, and can scarcely be expected, except from one who has had the advantage of some personal observation, as well as intimate intercourse with those who have made the Rocky mountains their home for years, and to whom its peaks, gorges, streams, and other peculiarities are familiar things.

Let us examine the whole line proposed by him with some minuteness. Commencing at Prairie du Chien,† the line will run entirely across the State of Iowa, and strike the Missouri river at or near Council Bluffs, in nearly a southwest direction, over an undulating surface, about equal to almost any other which could be selected from the Mississippi to the west line of the States. The streams to be crossed are Turkey river, the Wabixipinikan, three branches of Red Cedar river, the Iowa river, the Des Moines, with several tributaries, the Raccoon river, and Boyer's river. The amount of grading is inconsiderable, but the number of bridges, culverts, &c., great.‡

At Council Bluffs, it is proposed to bridge the Missouri, and follow up the north bank or bluff of Platte river to its forks, and thence, upon the north fork, leaving it to the south, to near its head; and thence to the great South Pass. On this portion of the route, Major Long traveled as far as the mouth of Platte. From him, as well as from personal observation, it is here asserted that the country on the north bank of that river is much more broken than it is upon the south bank, or upon the divide between that stream and the Kansas. A railroad is certainly practicable along the route, but it will require much more of expense and labor than one south of that river. After passing the forks of the Platte, the route will enter the black hills ten miles west of Fort Laramie, and continue through them to the Sweetwater, a northern branch, and from thence to the South Pass. Now, the author of this article, whilst at Fort Laramie, not only made several excursions into the black hills upon the North Fork, but entered upon

* See Doniphan's Expedition by Hughes, Humboldt's New Spain, Abert's Survey, and Gregg.

† His proposition is to commence at Lake Michigan, but I have inserted Prairie du Chien, in order to make a fair comparison of the three lines west of the Mississippi.

‡ Nicollet's Hydrographical Basin of Upper Mississippi; Report to Congress, 1843.

minute inquiries of traders, trappers and Indians, and he is satisfied that a mule cannot be traveled up the North Fork to Sweetwater, nor can war parties of Indians, *on foot*, pass through without extreme difficulty and hazard. These inquiries were made in 1843, and made with the express purpose of tracing out a railway line through the South Pass. There is no book from which the facts can be learned, and therefore, Mr. Whitney has only *guessed* that it might be done. The streams to be passed from Council Bluffs to the Sweetwater, are the Elkhorn, the Loup Fork of Platte, Wood river, and a number of small streams to the black hills, from whence a multitude of rapid torrents fringe the stream to its head. His route, therefore, must necessarily be changed to cross the North Fork at Fort Laramie, and thence follow the emigrant trail.

From the South Pass to the Soda Springs, in the northern bend of Bear river, the country begins to grow more broken and mountainous. Descending from the South Pass, the route strikes and follows Sandy creek to its confluence with the Green, (or Colorado of the West,) and crossing that stream, strikes Black's Fork; thence up that stream to the head of Muddy creek, (its main branch;) thence over a sudden dividing ridge to Bear river; and thence down that stream—making some detours to avoid *canons*—to the Soda Springs. This portion of the route presents no insuperable difficulties. The country, after passing Green river, becomes much broken, and the road winds much until it arrives at the foot of the dividing mountain ridge between Green and Bear rivers. This ridge is 8,234 feet above the sea, and the valley of Bear river is 6,446 feet; but the Pass no where ascends at a greater rate than 100 feet per mile.

From the Soda Springs to Fort Hall, after passing a dividing ridge, the route descends the Portneuf river valley, to Fort Hall. The Soda Spring is at an elevation of 5,738 feet, and Fort Hall 4,779 feet, a descent of 23½ feet per mile; but the altitude of the dividing ridge is not given.*

From Fort Hall to Walla Walla on the Columbia, the route cannot follow the river bottom, because in many places the mountains present perpendicular walls on each side for miles together. Lewis and Clark attempted to descend Lewis' Fork in canoes, but found it impracticable on account of the *canons* and falls; and Fremont says of Fort Hall that it "obtains nearly all its supplies from the distant depot of Vancouver by a difficult water carriage of 250 miles up the Columbia river, and a land carriage by pack animals of 600 miles."† With this account that of Captain Bonneville, who traversed this whole region, entirely agrees;‡ and the author of this article has conversed with a number of old trappers and indians, some of whom were with Bonneville, and they all concur in these facts. The route of Mr. Whitney must therefore follow the usual road of the emigrants, and that of Fremont, who expressly states that he sought the one which could be easiest traveled. Descending the rough and barren valley of Lewis Fork, this route crosses this river 160 miles below Fort Hall, then passes to the head of Boise river and follows that stream to its

* Fremont. † Ibid 163. ‡ Irving's Adventures of Bonneville.

mouth at Fort Boise; here it recrosses Lewis river, and after passing over immense mountain chains for many miles, descends into the valley of the *Grand Ronde;* and thence through the great mass of the Blue mountains to the head of Walla Walla river, and down that stream to its mouth at Fort Walla Walla. The streams crossed on this part of the route are Portneuf river, Panack river, Fall creek, Raft river, Swamp creek, Goose creek, Rock creek, a nameless creek, Lewis river, four creeks, Barrel Camp creek, Rock creek, five other creeks, some tributaries of the Boise, the Boise river, Lewis river again, the river Aux Malheurs, Birch creek, Burnt river, Powder river three times, three branches of Grand Ronde river, the Umatilah river, and the Walla Walla, with several tributaries.

From Fort Hall to Walla Walla let us here add the results of barometrical observations, as given by Fremont:

On the 23d September, in a distance of twelve miles, we have, first: in one hour's travel, a descent of 83 feet; in another hour an ascent of 113 feet; in another hour an ascent of 21 feet; in another, 3 feet; in another 36 feet; in another, 7 feet; in another, descent 13 feet; in another, ascent 4 feet; in another, descent 30 feet; in two more, ascent 1 foot; in another, descent 22 feet; in another, descent 71 feet; in another, descent 6 feet; in another, descent 21 feet.

On the 24th, in a distance of ten miles. Between sunrise and noon, a descent of 31 feet, and between noon and sunset, a descent of 117 feet. On the 25th, in a distance of 13 miles—From sunrise to 2 P. M., ascent of 57 feet; one hour more, 10 feet; another hour, 15 feet; another, 13 feet; in another, 67 feet.

On the 26th, a distance of 17 miles. Sunrise to noon, ascent 88 feet; noon to sunset 295 feet.

On the 27th, a distance of 20 miles. Sunrise to sunset 322 feet, 16 feet per mile.

On the 28th, a distance of 25 miles. Sunrise to sunset, 623 feet ascent, 24 feet per mile.

It must be recollected that the ascents and descents are for the most part sudden and precipitous, and that barometrical observations as here given, are far from conveying an accurate topographical idea. In passing the Blue mountains Fremont broke his barometer, and from the Grand Ronde the altitudes are now added from his topographical map. "From the waters of Powder river, says Fremont, "the road ascended to a dividing ridge," and then "directly descends into the Grand Ronde by the face of a hill so very rocky and steep, as to be apparently impracticable." This valley is 2,660 feet, the base of the Blue mountains is 2,700 feet. After traveling twenty-one miles, the mountain is 3,830 feet—54 feet per mile. In three miles more the elevation is 4,760 feet—311 feet per mile. In seven miles more, the elevation was 5,000 feet. On the western side these mountains descend more suddenly, and they are therefore impassable by a railway.

From Fort Walla to the mouth of the Columbia, the proposed route must descend immediately along the emigrant road on the river bank for some distance; but this is impossible, for the river rises sixty feet in the spring and submerges this road. If the river is left, a mass of abrupt mountains present themselves between the Walla Walla and

John Day's river, and again between the latter and Fall river. Below Fall river the great Cascade range presses up to the very waters of the river, completely shutting it in. Fremont says of the river, "entering among the lower mountains of the Cascade range, high and steep rocky hills shut it in on either side, rising abruptly to the height of 1500 feet above the water, and gradually acquiring a more mountainous character as the river approaches the Cascades." Again, "near the shore the river is bounded by steep escarped hills and huge vertical rocks, from which the waters of the mountain reach the river in a variety of beautiful falls, several hundred feet in height." Beyond the Cascade range, the coast stretches north from California west of the Wilhamette valley, and across the Columbia, presenting another impassable barrier to a railway. Of this portion of the route, about three hundred miles is through a fearful succession of volcanic mountains, intersected with frightful chasms, where a wagon wheel was never turned (though many attempts have been made,) and where a solitary horseman finds it well nigh impossible to toil his serpentine course. Is it not the extreme of absurdity to dream of a railway here? Let those who are haunted with hopes or doubts, examine Fremont, Lewis and Clark, De Smedt, Burnett, Farnham, &c., and they will be satisfied.

Recently, Mr. Whitney seems to have an idea that, by turning northward from the South Pass, to the head of Salmon river, a more feasible route can be found. Some of the mountain barriers might be turned in this way, but not much would be gained. The writer has conversed with a number of old trappers on this point, and he is satisfied that a railway cannot be made from the South Pass to the mouth of the Columbia, without an expense of millions to the mile, in many places, and most probably it is altogether impossible.*

Having thus examined carefully the routes proposed by Lieut. Maury and Mr. Whitney, and ascertained that they are both impracticable, the question recurs, Is a route to be found from the Mississippi to the Pacific, which is direct, practicable, cheap, and in all respects advantageous? The author of these articles, from his earliest youth, has deeply interested himself upon this subject. At the age of eighteen, with the enthusiasm of youth, he collected the materials for a volume, to prove the great advantages which would result from the planting of a colony at the mouth of the Columbia, and the opening of an overland trade across the continent to India. He even proceeded so far as to write many pages of this book; but, after he acquired full information, became entirely satisfied that an overland trade up the Missouri, and down the Columbia river, could not rival the present sea route, and would be, therefore, unprofitable. From that day to this, he has watched, with deep solicitude, the progress of improvement in railways and steam vessels, and has permitted no opportunity to escape unimproved, for acquiring an accurate knowledge of the country west of the Rocky Mountains, with a hope that he should see the time when the commerce of the Pacific could be revolutionized. He has long been satisfied that no railway could be made down the Columbia, nor any where south of the great South Pass.

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* See also Bonneville's Adventures, by Irving.

In 1843, he spent some time in the mountains, and upon the plains, and he then was impressed with the belief that he had, at last, succeeded in finding a practicable route for this great work; but he had no means of satisfying himself beyond all doubt, until the last expedition of Col. Fremont established some facts necessary to be taken into the calculation. Besides, until very recently, the western terminus of this route was in the hands of a foreign power, and there was nothing to be gained until the territory of California was acquired. For seven years past, he has not doubted that this acquisition was inevitable, but the imprudence of Mexico has precipitated the event.

The route, as proposed, will be here traced out, and topographically explained; and the author feels a perfect assurance that *no other route can be pursued; and this is not only practicable, but will prove, in its whole length, as cheap as any other railway of any considerable length in the United States.*

It is proposed to make the mouth of the Kansas river the eastern terminus of the railway. From that point proceed as nearly west as may be, to the forks of Platte river; thence crossing the South Fork, and following the North Fork of that stream to Fort Laramie; thence along the usual emigrant road to the South Pass; thence by the nearest and best route to the head of Bear river; thence down that stream to its mouth, and through the Mormon settlement to the outlet of the Utah Lake into the great Salt Lake; thence across the desert, leaving the Salt Lake on the north, to the head of Mary's or Humboldt river; thence down that stream to the "Sink;" thence to Salmon Trout river; thence across the pass of the Sierra Nevada to the Sacramento valley; and finally, down that valley to the Bay of Francisco.

From the mouth of the Kansas to the forks of Platte river, this route ascends the fertile valley of the Kansas to Blue river, and follows that stream nearly to its head, from whence, in 25 miles, it strikes the Platte near the head of Grand Island, and follows the valley of that river to its forks. This part of the route is absolutely free from impediments, and needs no grading, so admirably does it lie for a railway.

Crossing the South Fork, where a bridge is requisite, it follows the North Fork to Fort Laramie, through a valley well nigh as level as a floor, and without crossing a stream until it arrives at Laramie's Fork, which is about ten yards wide.

From Fort Laramie to the South Pass, the road will need but little grading. Fremont says: "The road which is now generally followed through this region, is a very good one, *without any difficult* ascents to overcome." He adds: "From the mouth of the Kansas to the Green river valley, (west of the mountains,) there is no such thing as a mountain road on the line of communication."

The South Pass is 7,490 feet above the Gulf of Mexico. August 13th, Fremont's descent in 24 miles, was 22 feet per mile. August 14th, in 25 miles, 11 feet per mile. August 15th, in 29 miles, 15 feet per mile. August 16th, in 26 miles, 3 feet per mile. August 17th, in 21 miles, 3 feet ascent. August 18th, in 32 miles. about 15 feet ascent. August 19th, in 28 miles, about 6 inches per mile descent.

This brings us to Muddy creek, a branch of Ham's Fork, which is

again a branch of Black's Fork, a tributary of the Colorado of the West. The road from the South Pass to Muddy creek, the point to which the foregoing calculations bring us, descends Sandy Creek to its confluence with the Colorado, and crossing that stream, strikes Black's Fork, and thence up that and Ham's Fork to the head of Muddy. On the 20th August, Col. Fremont passed the "divide between the waters of the Colorado and Bear rivers." He say, we continued to travel up the creek by a very gradual ascent and a very grassy road. At noon we halted at the last main fork of the creek, at an elevation of 7,200 feet, and in the afternoon continued in the same excellent road, up the left or northern fork of the stream towards its head, in a Pass at an elevation of 8,230 feet." "From the summit of this Pass, the highest which the road crosses between the Mississippi and the Western Ocean, our view was over a very mountainous region." "The ascent to the summit of the gap was occasionally steeper than the National Road in the Alleghenies; and the descent by way of a spur on the western side, is rather precipitous, but the Pass may still be called a good one." This Pass no where presents an ascent or descent of more than 100 feet per mile, an obstruction not more formidable, we imagine, than many that have been passed by railroads in the States.*

Once in the valley of Bear river, the route descende that stream, making some "cut off" to avoid *canons*, without serious impediment, to the plains east of the Great Salt Lake. Following these plains, we arrive at the Mormon settlement, which is on the east bank of the Utah Lake, which connects by a stream, a few yards wide, with the Salt Lake on the north.

From the Utah outlet to Mary's or Humboldt river, which is directly west, is 315 miles. This outlet is 4,200 feet above the level of the sea. West of this outlet, Mr. Bryant says:† "Our route for several hours described nearly a semi-circle when there was a break in the range of mountains, and we entered upon another plain."

The next day he says "they determined to cross a range of mountains instead of following to avoid it, the shore of the Salt Lake, we laid our course nearly west."‡ This range then can be turned. West of the range he says "we took a north-east course across the plain, striking Fremont's trail of last year." "The breadth of this valley from one range of mountains to the other, is twenty miles." At this point Mr. Bryant says "Mr. Hudspeth who had kindly conducted us thus far from Fort Bridger, left us for the purpose of exploring a route for the emigrant wagons farther south. He was accompanied by three gentlemen, Messrs. Ferguson, Kirkwood and Minter."

Mr. Minter here mentioned is a native of Shelby county, Kentucky, and now a resident of Clay county, Missouri. He is well known to the author of this article, and is a sensible, business young man. By him the writer is assured that the party fully succeeded in finding a wagon road—that the road was a good one in every respect, save as to scarcity of water—and that the emigrant wagons passed through to Mary's river without accident. Mr. Minter also states that he sees no

* See also Bryant and Bidwell's Narative. †Page 164. ‡Cox 66.

reason why a railroad may not be made on this route as easily, or more so, than over the Alleghenies east of Pittsburgh. This is the best, and with Mr. Bryant's, the only testimony we have as regards the route from the Salt Lake to Mary's river; but even upon that traveled by Bryant's party there is no doubt a railroad could be made. Mr. Bidwell who went to California in 1842, passed around the northern end of the Salt Lake and thence west to the head of Mary's river. In his published journal he states enough facts to prove incontestibly that a road could be made along that route. Capt. Bonneville also despatched a party from Bear River Valley to explore the Salt Lake. This party instead of doing so, passed north of the Lake to Mary's river and followed it down to California. No mention is made in Irving's Narrative of mountains on their route to Mary's river,* and the writer of this article was assured by one of that party, that on this part of their road the mountains were turned.

Down the valley of Mary's river there is not a single cañon which may not be easily turned, and for nearly its whole length there would be but slight labor in grading. Where the emigrant road strikes this river it is 4700 feet above the sea, and at the point where it sinks it is 4,200 feet. The termination of this river is within fifty miles of the base of the Sierra Nevada, and opposite the Salmon Trout River Pass, which is "only 7,200 feet above the level of the sea, and less than half that above the level of the Basin.† This pass is forty miles above New Helvetia, by which the route descends the valley of the Sacramento, directly through the gold region, to the Bay of Francisco, without any impediment whatever.

Having shown that the routes proposed by Lieut. Maury, and Mr. Whitney, if practicable at all, (which is difficult of admission,) pass over a country much worse than the new route proposed, let us now give some additional reasons why the new route should be preferred.

1. Its eastern terminus is outside of any sovereign State. Although the coming administration, and the dominant party, may have no constitutional scruples about constructing railways through sovereign States, it is nevertheless true that Monroe, Jefferson, Jackson, Van Buren, and other distinguished citizens, have maintained that Congress has no such authority; and it is also true, that a very large party—one which has generally had the majority—adopt this opinion as a cardinal principle; and it is always prudent, at least, to respect such opinions, save in case of overruling necessity.

2. The new route, as far as the South Pass, does not cross as many streams as either of the other two, nor does it pass over as much broken country, where "cuts" and "fills" would be requisite. This will be a great saving of expense.

3. The new route passes over a larger quantity of fertile land than either of the others. The route to Santa Fé, beyond Council Grove, (only fifty miles from the State line,) where it has been shown Maury's road must pass, is absolutely sterile to Santa Fé.‡ Lieut. Emory says: "Nov. 24. All of Northern Mexico, embracing New Mexico, Chihua-

* See Bonneville's Adventures. †Fremont's Geographical Memoir. ‡ Gregg, J. T. Hughes, Emory and others.

hua, Sonora, and southern California, as far north as the Sacramento, are, as far as the best information goes, the same in the physical character of its surface, and differs but little in climate and products. In no part of this vast tract can the rains from Heaven be relied upon to any extent, for the cultivation of soil. The earth is destitute of trees, and in great part also of any vegetation whatever. A few feeble streams flow from the great mountains. These are separated by plains, or mountains, mostly without vegetation, and may be called deserts. The cultivation of the earth is, therefore, confined to those narrow strips of land which are within the level of the waters, and it involves a degree of subordination, and absolute obedience to a chief, absolutely repugnant to the habits of our people. The chief, who directs the irrigation, must be implicitly obeyed. A departure from his orders may endanger the means of subsistence of many people." And, in many other places, Major Emory represents the whole of this country in even worse colors. His testimony is amply fortified by others.* There is, then, no agricultural region on this route.

From the mouth of the Platte river, west to the mountains, there is no cultivable land on the north side of that stream. This is the testimony of Long, and many others. Nor is there a single spot of soil on Whitney's line, until the Bear river valley is reached; and his road leaves this valley at the Soda Springs, including only one-half its length. From this point, several hundred miles down Lewis river, to the Grand Ronde, the angel of desolation has set his seal upon the whole land. Fremont says, at Fort Hall: "Beyond this place, on the line of road along the barren valley of the Columbia, there does not occur, for a distance of 300 miles, a fertile spot sufficiently large to produce the necessary quantity of grain, or pasturage enough to allow even a temporary repose to the emigrant. The Grande Ronde is only twenty miles in diameter, and beyond this, except a small patch at Walla Walla, the country is uninhabitable to Vancouver,† As to the portion of Whitney's line through the State of Iowa, that is more than overbalanced by the connecting line through Missouri, hereafter noticed.

Now, from the mouth of Kansas, for two hundred and seventy-five miles west, there is as fine and fertile a soil as the world affords, well timbered and watered.‡ Thence up the southern valley of the Platte to the Forks, the soil is better than on the north side, and from the Forks to Fort Laramie, Col. Fremont who analyzed the soil, found it a fertile formation of marl and earthy limestone. Thence to Bear River Valley the soil is indifferent; but down the whole course of that stream Fremont states the valley to be delightfully fertile. At the Mormon settlement on the Utah there is a broad valley of fertile soil, extending indefinitely south along the western slope of the Wahsatch mountains.§ And down Mary's river its valley is fertile, and upon the Sacramento we have the largest body of rich arable land west of the Rocky mountains.

4. The new route should be preferred, because the territory north of

*Emory s Report, Abert's Survey, Hughes, Gregg, Humboldt and Pike.
†Fremont. ‡Fremont. §Fremont's Exp. and Geographical Memoir.

the Platte has already an ample commercial outlet for such a country down the Missouri river; and because the Missouri and Columbia, in the far future, when population has spread along their banks, will be sufficient for the purposes of interior trade from Oregon to the Mississippi valley; and because, unless we unite California to the Union, by a railway, it will be, to all intents and purposes, cut off from us commercially, and as a necessary result in social and political feeling and interest. Of what advantage will the commerce of the Pacific coast, with all Asia, be to us, without a railway? We cannot buy their products, because ours are nearly the same. No exchanges can be made between us. California will command the markets of all Asia, because she can substitute a barter for a trade, in cash, and because she can undersell all others.

5. The new route should be preferred because a railroad can be constructed on it for less than half which would be required on either of the other lines. East of the mountains the other two are more cut up by streams and bluffs, and west of them they run absolutely for hundreds of miles across immense mountain chains; whereas the new route is nearly free of intersecting streams, and is only crossed by a narrow [illegible]ling ridge at the head of Bear river—at most by a low ridge [illegible] head of Mary's river—and by the Salmon Trout Pass, none of w[illegible] places are as bad as places in the Alleghenies where railroad[illegible] now constructed.

6. The new route is preferable because the western terminus is better. The mouth of the Columbia cannot be entered by large vessels, and to take the road to Puget's Sound would involve the expense of a bridge across that great river; and besides, there is no safe harbor at Puget's Sound. The Bay of Monterey, although good, is not equal to that of Francisco, and upon the latter and its tributaries, nearly all the good soil of California lies; and therefore, this must be the centre of business and population.

7. The new route is preferable, because it relieves the government of the union from the expense of five hundred miles of the road as proposed by Mr. Whitney, this being the distance from Lake Michigan via. Prairie du Chien to Council Bluffs, This is a saving of at least from $8,000,000 to $10,000,000. The people of Missouri are now contemplating the construction of a railway from St. Joseph to Hannibal, and another from Independence to the mouth of the Ohio, with connecting lines from each of these to St. Louis.

If Congress will make the usual grant of alternate sections on these lines, and resolve upon the Pacific railway, *there is no doubt whatever*, that these lines will be so run as to connect at the mouth of the Kansas, and will be completed long before the great Pacific line can be. On this subject it is certain *there would not be a dissenting voice* in the State. Mr. Whitney's plan has been hitherto mainly supported upon the supposition that there was no other hope of paying for this railway than with the public lands; and that his route passed through the only region where the public lands would yield a sufficient sum for the purpose. This may be emphatically denied. After the usual grant of alternate sections is made as here suggested, there will be more public lands left in the State of Missouri, than there is in a belt

of sixty miles across Iowa; and from the mouth of Kansas west two hundred and seventy-five miles, there is the finest body of fertile soil in the United States. The public lands, then, on the new route, are more valuable than on that of Mr. Whitney. On Lieut. Maury's there is none.

8. There is no need of relying upon the public lands. If Gov. Mason's report may be relied upon—and it is fortified by all other accounts—there is more gold in California, on the western terminus of the new route, than will pay the whole debt contracted by the war, and construct a treble line of railway to the Pacific. How else can this fund be appropriated, which will render it half so beneficial? And what else can be done with it? Shall it be drawn into the Treasury of the Union, and expended upon the ordinary operations of the Government, and for improvements within the States? Most certainly, Congress will not dream of attempting it; and, moreover, if it did, the people of California would sever the bonds of the Union—and justly too—within four years. Justice requires that this revenue shall be expended for the benefit of the great country from the bosom of which it is derived, and how else can it be so much benefitted?

9. The means for constructing the work abound more plentifully upon the new route than upon either of the others. Timber is abundant on the lower Missouri, the Mississippi and their tributaries, and there is good timber for 200 miles upon the Kansas river. From the mountains westward to the Salt Lake, good timber is abundant, and down Mary's river, and in the Sacramento valley, there is the finest timber in the world. On the route of Lieut. Maury, there is not a solitary stick of timber west of the State line. On that proposed by Mr. Whitney, there is none this side of the mountains, and none beyond Bear river, until we reach the Blue mountains, five huudred miles below. Directly on one of the proposed branch lines from St. Louis, there is the richest and most extensive bed of iron ore in the known world; and who can doubt that if these works should be undertaken capital would instantly seek investment where there was so great a demand? Even at this time the best judges are of opinion that the working of this ore would yield enormous profit. Here, then, enormous transportation would be saved, and a rich source of wealth and prosperity be developed.

10. The route proposed is a more direct route to China and the East Indies, from Europe, and the interior cities of the United States, than either of the others. Lieut. Maury does not undertake to say what distance a *practicable* route would be from Memphis to Monterey; and nothing can be clearer than that Mr. Whitney is wholly mistaken in his calculations on this point. This scheme of measuring the breadth of a continent, by lines of longitude, and then asserting distances without regard to geographical features, is, to say the least of it, very absurd. The route of Fremont, the emigrants, and of Emory, are evidently the best and only practical guide. All of those persons say that their object was to find the shortest passable road; and surely we cannot expect to run a railway through such a country, more directly than a mule can travel over it. The probability is just the reverse of all this—and so is the experience of the world.

*From Memphis to Forsythe, is	210 miles.	
From Forsythe to Osceola,	115	
From Osceola to Marie de Sygnes,	50	
From Marie de Sygnes, by Council Grove, to Santa Fé,	800	
From Santa Fé to San Diego Bay,	1,043	2,218 miles.
If Col. Cook's route be followed, as seems necessary, this will add to the distance		150
And, if a new line from the Colorado to Monterey be substituted for the one to San Diego, as Lieut. Maury proposes, this will add		300
From Monterey to Shanghae,		5,400
Total,		8,068 miles.
*From Prairie DuChien to Council Bluffs is	360 miles.	
From Council Bluffs to the South Pass,	880	
From South Pass to Walla Walla,	770	
From Walla Walla to Puget's Sound,	300	2,210 miles.
From Puget's Sound to Shanghae,		5,200
Total,		7,410 miles.
*From St. Louis to mouth of Kansas,	220 miles.	
From mouth of Kansas to South Pass,	900	
From South Pass to the Salt Lake,	296	
From Salt Lake to Mary' river,	300	
From Mary's river to Truckee Lake,	408	
From Truckee Lake to New Helvetia,	146	
From New Helvetia to Francisco Bay,	40	2,310 miles.
From Francisco Bay to Shanghae,		5,300
Total,		7,610 miles.

This calculation, so far as respects Lieut. Maury's route, is, for the location which Mr. Singleton has given to it—and I know of no one more competent to judge—as far as Santa Fé. Beyond that point, the reports of Emory and Cooke are the guides. Mr. Whitney's route, from the Mississippi westward, has two hundred miles the advantage of the new route; but it must be remembered that the real terminus of his road is at Lake Michigan, which would add 250 miles to the distance. It is deemed unnecessary to add tables here, to prove that all the great commercial centres of the Union will be brought nearer to China by the new route proposed, than by any other. A glance at the accompanying map will be sufficient to show this fact beyond all cavil.†

Lieut. Maury has urged in favor of Memphis, that it is a central point as respects the Union; and from that point, the products of the

*These distances are given from Singleton, Gregg, Wislizenus, and Emory, for the route by Santa Fe; and from Nicolet, Fremont, and Bryant, for the other two. Those by sea are estimated from good sources, and are believed to be correct.

†See the January No. of the Western Journal.

east could be more readily and cheaply distributed than from any other. Now let the reader look at the map, which exhibits all the railroads of the Union, finished and in progress, and he cannot fail to be struck with the advantages gained by the new route. 1st. At the mouth of the Kansas, the rich products of the Pacific may go down the Missouri, up and down the Mississippi and Ohio, and by all their tributaries to every point in this great valley, where boats of any size can run. 2d. The northern branch of this railway crosses the Mississippi at Hannibal, and proceeds directly east to Philadelphia, distributing along the whole line, through numerous branches, wealth to the north and south. 3d. The southern branch, striking the Mississippi opposite the mouth of the Ohio, here connects with these rivers, and with *all* the great lines of railway throughout the southern States; and 4th. Branches from St. Louis, north, south, and east, still further multiply the facilities of trade, and stimulate the energies of all branches of industry. To St. Louis, too, the whole railroad system of the Union converges, as well as the great waters of the west, affording numerous facilities for exporting the rich productions of the country into the Pacific.

ART. IV.—FREE TRADE.

BY THE HON. ADAM BEATTY, OF KENTUCKY.

Convinced that more labor is lost by reason of the great distance between the producers and consumers, than through ignorance of either the science or art of agriculture, we have hitherto confined our labors in the agricultural department of the Western Journal, chiefly to an examination of the disadvantages involved in our present system of exchanging commodities. In treating this subject, we have always endeavored to avoid the political questions of "protection" and "free trade," simply aiming to direct the attention of the agriculturalists, to the inconveniences under which they labor, arising from a want of manufacturing establishments in their midst. For we are persuaded that when the true nature and extent of the evil shall have been understood and fully appreciated, there will be little difficulty in discovering an appropriate remedy. The protection of labor by imposts on foreign commodities, must in every instance involve a question of expediency, which can only be determined by the facts of each particular case as it occurs; and the true policy of a country may in some instances require, that certain commodities should be admitted free of duty. Indeed, this may sometimes operate indirectly to the

protection of others; but a system of free trade embracing every commodity would, in our case, amount to a surrender of much the larger portion of the benefits accruing from the excellence of our institutions, as well as from the abundance of our natural resources.

The operation of such a system is most happily illustrated by Judge Beatty, in the following article:

To the Editors of the Western Journal:

It is not surprising that a doctrine, so plausible as that of *free trade*, among all nations should have won the approbation of large classes of our citizens. If the circumstances having a bearing upon trade of all nations, were precisely the same, then, indeed, it would be practicable to allow of perfect freedom of trade among them, subject to no other restriction than that which would arise from moderate revenue, and port duties. Such a trade would doubtless be advantageous to all nations thus circumstanced, carrying on commerce with each other.

But could such trade be carried on among nations whose circumstances were materially different, to the mutual and *equal advantage* of each? Let it be supposed that *free trade* should be opened between five nations, under the following circumstances:

1. One whose population was two hundred to the square mile, in which the average price of labor was twenty cents per day; and where capital was so abundant that money could be readily obtained, upon good security, at three per cent. per annum.

2. With a population of one hundred to the square mile, in which the average price of labor was forty cents per day; and where money could be readily borrowed, on good security, at four per cent. per annum.

3. With a population of fifty to the square mile, in which the average price of labor was sixty cents per day; and where money could be readily borrowed, on good security, at five per cent per annum.

4. With a population of twenty-five to the square mile, in which the average price of labor was eighty cents per day; and where money could be readily borrowed, on good security, at six per cent. per annum.

5. With a population of ten to the square mile, in which the average price of labor was one dollar per day; and where money could be borrowed, on good security, at seven per cent. per annum.

It is obvious, from a bare inspection of the above propositions, that the nation (No. 1) having the greatest population per square mile, and where labor and capital were at the lowest rate, would have an advantage over all the others, in carrying on with them a system of *free trade;* and that this advantage would be greatest with nation No. 5, and proportionably so with those No. 4, 3 and 2.

That the nation No. 2 would possess the next greatest advantage resulting from the mutual and free trade among the five, and so with the others in succession; if, indeed, advantage could result from such an unequal commercial arrangement.

But No. 1 would have so great and decided an advantage even over No. 2, that the latter would soon be compelled, in order to compete successfully with No. 1, to reduce the *price of labor* to the same standard which prevailed in the neighboring nation. It would still labor under the disadvantage of paying more for *capital*, to enable it to carry on large manufacturing establishments; but by being content with more moderate profits, this might be borne.

The relief thus secured to the nation No. 2, in placing it upon an equality, or *nearly* an equality with its rival, would make the condition of the other three the more deplorable, because they would now suffer by the profits and *prosperity of two*, instead of *one* of the five free trade nations.

If the alliance of the five nations in free trade, could not be dissolved, *neccssity* would compel the three suffering nations to resort to the same means which was found effectual in relation to No. 2, to-wit: *a reduction in the price of labor.*

This is the inevitable result to which *free trade* must come among nations, if such a system were *permanent.* The price of labor must be equalized in each. Although the nations having the larger population, and the most abundant capital would still have the advantage, which would be adequate to the protection of their *home interests*, yet this advantage would not be so considerable as to enable them to interfere with the *home industry* of foreign nations, which had reduced their labor to the minimum of twenty cents per day. But is it desirable, for the sake of the *free trade principle*, that the price of labor should be reduced to the minimum of twenty cents per day?

No one, who has turned his attention to those countries in which labor is at its minimum, and compared the condition of the population there, with that of the population in the United States, can, for a moment doubt, that our system of liberal compensation for labor is attended with greatly superior benefits to the European system.

This is a subject in which the great masses of our people are deeply interested; nay, it is one which concerns our entire community. It would be the greatest blessing which could befal our country, if the present system of high price for labor, could be perpetuated. But this blessing cannot be secured and perpetuated but by banishing the doctrine of free trade from our counsels.

If our productions, whether of agriculture or manufactures, are forced to compete with the productions of foreign nations, where the price of labor is only one-fourth or one-third of what it is here, it is evident that either *ours* must be superceded by those resulting from foreign labor; or that the price of labor must be so far reduced in the United States, as to enable it to compete successfully with foreign labor.

By the introduction of foreign iron, woolens, &c., a vast amount of *foreign agricultural products*, as well as of *foreign labor*, is introduced into the United States. *Iron* is the entire product of the breadstuffs and labor of England. We import of this article to the value of nine millions annually, and to that amount supercede American agricultural productions and labor.

Of woolen goods we import annually to the amount of ten millions

of dollars and upwards. The wool alone, constituting the raw material, would be worth to the United States, five millions, and the other five would go to the producers of breadstuffs, and the laborers of the country, if adequate protection were afforded to *home industry.* To these two items, many others might be added; but I feel that I should, by going into particulars, only repeat arguments which you have so strongly urged in several numbers of your able and interesting "Western Journal."

In your September number you remark, that "the only hypothesis of society, that is consistent with free trade, is, that all nations should be equal and alike in all respects." The chief points in which this equalization should exist, is population, capital, advancement in the perfection of machinery, applicable to manufactures and the arts, and the price of labor. In all these particulars, England has advantages which it might be supposed would enable her to enter into a free and successful competition with all other nations; and that, consequently, free trade would be very suitable to her circumstances. Of this opinion were her statesmen; and they have led the way, and used their influence to induce other nations to follow the example of England, in adopting free trade principles. In the short time that has intervened since the introduction of this new principle in her commercial policy, experience has taught her that *other circumstances* beside those enumerated above, have a material influence in deciding the question whether a nation is prepared, *at all points*, to adopt the principle of free trade.

Under the system of *protection*, which prevailed until recently, England guarded, with the utmost vigilance, her agricultural interests. The policy of securing a sufficient quantity of breadstuffs to feed her numerous population, from her own agricultural resources, was deemed a measure of wisdom essential to the welfare of the nation. A domestic supply, *in ordinary seasons*, was looked to with the utmost confidence, and the most liberal encouragement and *protection* was extended to her agriculturalists, to induce the utmost efforts to produce a full supply of *home products*, to satisfy the *home consumption.* But as unfavorable seasons, as all experience had shown, must occasionally reduce the crop below the usual *average*, and consequently leave a deficiency of breadstuffs, the *protecting duty* on breadstuffs was regulated by a sliding scale, by which the duty was gradually *reduced*, as the price of breadstuffs *rose*, in consequence of the reduced quantity of the home supply, arising from the unfavorable season.

If this scale had been wisely regulated, as time and experience should have dictated, the system would have been as perfect as could have been devised, consistently with the principle of protection to *home industry.* But the statesmen of England, now in power, believing that such a state of things existed as would enable that country to compete successfully with all others, determined to try the experiment of free trade, not all at once, but by slow degrees. In accordance with this new system of commerce, the duty on breadstuffs was to be gradually reduced; and, after the 1st of February, 1849, was to be admitted entirely *free of duty.*

Now, although England, as shown above, was in a condition which

would enable her to compete successfully with other nations, upon free trade principles, in most branches of commerce, yet experience has shown that she is not thus eligibly situated in relation *to all;* and among these, particularly in the production of breadstuffs. In the rearing of these upon her *high priced lands*, subject, as they are, to the *enormous taxes* which are levied for tithes, for *poor rates*, *paying the interest on her very large public debt*, and the expenses of a most extravagant government, she cannot compete successfully with the wheat growers of southern Russia, and the United States.

In the gradual process of reduction of duty on foreign breadstuffs, the growers of wheat in England have struggled with foreign competition, even at a great sacrifice, because they cannot readily substitute other crops in the place of wheat, but every successive reduction, renders such competition more and more difficult, and must inevitably tend to a *diminution* of the quantity of breadstuffs produced in England.

The following extracts, from Blackwood's Magazine for November, 1848, show the state of things which has already arisen from the adoption of the free trade principle in England:

"Is it not clear, and utterly beyond dispute, that our exports, for which we have sacrificed everything, are greatly on the decline, and that our imports are steadily increasing? Not even the merest tyro in political science — not even the dullest dolt that clamored at the meetings of the League—will venture to affirm that this is a state of things, which can continue without entailing ruin on the country." (page 633.)

"The success of the national expenditure above the revenue, has been stated at the enormous sum of a million and a half, (sterling,) though we believe that in reality three millions would not cover the deficiency; and a considerable item even of that revenue is to be cut off from us, when the act repealing the corn law shall come into full operation."—(page 633.)

"We must again look to the customs as our main source of revenue; and more than that, as our absolute salvation from the anarchy which must ensue, if the hundred small non-importing trades of the country are to be sacrificed for the monopoly of the few, and the millions engaged in these pursuits, made beggars, and driven to desperation."

"And what is the state of the monopoly? How have the manufacturers gained? Let four millions of diminished exports, *on the half year* only, and the suppression of the Manchester return of the number of unemployed operatives, in the very metropolis of the League, be the reply. Yes—it has come to this pass, that the free traders DARE not publish to the world the results of their own madness. In the month of June last, there were within a fraction of EIGHT THOUSAND workmen without employment in Manchester alone, and the numbers were increasing so fast that that it was deemed expedient to discontinue the startling return."—(page 634.)

"How, then, have the manufacturers gained by free trade? On the one hand, they have not been able, by inviting and giving every facility to imports to increase the quantity of their exports; on the other

hand, they have closed up several of their surest markets. The full extent of our egregious folly has not yet become visible to the public."

"The number of vessels which have cleared out of the Clyde, from the port of Glasgow, during the last nine months, is in the proportion of 382 to 602 for the same period in the previous year!"—(page 634.)

"We have seen and felt the system as it works; and the only question now for our consideration is, whether we are to suffer it to endure? If we do so, it is vain to deny that we are on the verge of ruin. There is not a symptom of improvement. Day by day the cry of distress waxes louder."—(page 635.)

If such a state of things existed even before the repeal of the corn laws had taken full effect, it is not difficult to foresee that *free trade in breadstuffs* will soon have run its race.

The last accounts from England represent grain as "dull and declining. Baltimore and Philadelphia flour twenty-seven shillings, and best Western Canal thirty shillings per barrel." This is equal to six and a half to seven dollars per barrel. At the same date, the price of flour in Baltimore was $5, and in New York $5 25 to $5 37. As flour can be freighted for fifty cents per barrel, it is evident that after February, when the repeal of the corn law takes full effect, flour in England must fall to from six and a half to seven dollars per barrel. Such prices would prove perfectly disastrous to the wheat growers in England. They would no longer be able to pay their poor rates, tithes, land and other taxes; and the government would be prostrated for the want of means to sustain itself. We may then feel perfectly assured that our immense exports of breadstuffs to England will, at no distant day, be greatly checked by protective duties, levied by the English Parliament.

The extent of the market which England will then furnish for breadstuffs, may be gathered from the following extract from the Essays of Beatty on Agriculture:

"Flour is another of our great agricultural staples. The average annual export of that product for five years, from 1791 to 1795, inclusive, was 810,433 bbls. For the five years from 1822 to 1826, inclusive, the average annual export was 850,599 bbls. Here is an increase of less than five per cent. in thirty-one years, whilst our population increased, during the same period, from four to about eleven millions, that is, 175 per cent. But if we come down to a later period, we shall find the foreign market for flour diminishing instead of increasing. The average annual export of flour, for a period of five years, from from 1836 to 1840, inclusive, was only 600,396 barrels, whereas if the export of this product of agriculture had increased in a ratio with our population, since the year 1792, it would have been nearly four times as great as the average of 1791 and 1792, that is 3,241,740 bbls."—(Page 172.)

I will give only one other extract from Blackwood, which will show that the English free trade system does not work well in relation to other articles of commerce, beside breadstuffs. At page 534 of the November number of his magazine, he gives the following reflections of a traveler in Germany, in 1848;

"Pondering these things deeply, I strolled on from shop to shop, gleaning every where as I went statistics touching the manner in which our free trade innovations have affected the industry of Great Britain. For a year and a half the boot and shoe trade has been remarkably thriving; the London market being the most profitable in the world, and nothing but British gold exported in return. As to cotton manufactures Belgium and Switzerland have the monopoly of southern Germany. The trade in Bohemian glass is rapidly superceding, at home, the labor of the silversmith. A complete service, so beautiful that it might be laid out on the table of a prince, costs about thirty pounds; and the names of the British magnates, which the dealer pointed to with ineffable triumph as purchasers, were so numerous as to convince me that the deteriorating influence of free trade was rapidly rising upwards. The same may be said of the cutlery, which is now sent to undersell the product of the British artizan, in his own peculiar market. When we couple these facts, which may be learned in every continental town, with the state of our falling revenue, and the grievous direct burden, which is imposed upon us in the shape of property and income tax, it is difficult for any Briton to understand upon what grounds the financial reputation of Sir Robert Peel is based, or to comprehend the wisdom of adhering to a system, which brings us, in return, no earthly recompense or gain."

I need hardly remark, that if Great Britain cannot, with all her advantages, continue her free trade system without immense sacrifices, how is it possible that the United States should be able to do so for any length of time?

Our *immense* exports of flour, during the year ending 30th of June, 1847, gave us a prodigious stock of specie, which has hitherto furnished the means of bearing up under our free trade system; but that superabundance of the precious metals is rapidly leaving us. And if England, as she certainly must do, should change her policy, in relation to the admission of breadstuffs, free of duty, we may look for a degree of pressure in this country, arising from *free trade principles*, greater than has ever yet been experienced. A wise and prudent foresight, and energetic action to guard against the coming evil, can alone save the country from great distress, and the keenest suffering.

ART. V.—CULTIVATION OF GRAPES IN MISSOURI.

Desiring to obtain facts relating to the cultivation of the vine in Missouri, we addressed letters to several individuals, requesting information in regard to the success of such experiments as had been made in their respective neighborhoods. It was our wish to ascertain the nature of the soil in which the vines were planted, the mode of treat-

ment, the varieties of grapes cultivated, and the degree of reliance that might be placed on the production of a fair crop annually. But, to none of these inquiries have we received any reply. We have, however, been relieved in some measure from our sense of disappointment, in this respect, by the appearance of the annual report of the President of the St. Louis Horticultural Society, from which we are permitted to make the following extracts. After giving a very interesting account of a great many varieties of native grapes, the President proceeds to say:

"If Europe had but one kind, and that an imported one, from which five hundred have been produced, we certainly have a great advantage in possessing all the fruits of her experience, and these several varieties besides, which nature has provided for us.

"The fact is already demonstrated that we can make good wine of the grapes we have. Our own members, and our German friends at St. Charles and Hermann have proved this. When our countrymen see that the business of wine-making is a profitable one, nothing I am sure will prevent them from going into it, unless it be the California fever. At Cincinnati, they think that 800 gallons of wine to the acre is a great yield, and it certainly ought to be satisfactory—500 to 600 gallons to the acre is thought to be a successful crop. But Mr. Weller, of North Carolina, says he can produce 2,000 gallons to the acre from the Scuppernong Grape, and it is said that Mr. Herbemont, some years ago, produced at the rate of 3,500 gallons per acre, from his Madeira Grape. One of our fellow-citizens at Hermann, Mr. Poeschel, has this last year produced from 600 vines, on five-sixths of an acre, 1200 gallons of must, for which he was offered at the press $1 50 the gallon. Is any California gold mine more profitable than this?

"At Cincinnati, there are now 300 acres devoted to vineyards, and the business has been found profitable, though the grape is by no means a certain crop. Late frosts in the spring, destroying the flower buds, and wet seasons producing rot in the berry, very often seriously disappoint the wine-grower. What the average yield has been, taking a term of years, I am not informed; but it is believed to be quite as productive as in Europe, where, it is said, they are satisfied if they can get a full crop once in four years.* The yield from the Catawba per bushel of good grapes, is about four gallons. It is probably the most profitable for the wine grower to sell his must at the press, as by that practice he would avoid the risk of losing his wine by bad fermentation, and also the consumption of time required to mature the wine. This part of the business properly belongs to the wine merchant, a character who will come into existence, whenever a sufficient quantity of wine is produced to make it an object. The extent of vineyard cultivation in our neighborhood is shown in a note, for which I am principally indebted to our Corresponding Secretary."

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* The average product per acre, in France, is stated by Bouissingault to be 179·9 gallons, and the entire product is 976,906,414 gallons The produce of the vineyards of the German States is returned at 59,180,000 gallons. Colman states that the number of acres in vines, in France, to be 4,929,950.

"*Statement of the number and extent of Vineyards cultivated in the vicinity of St. Louis.*

	Have produced two crops.	Bearing first time, 1848.
Hermann—Nich. Poeschel,		1 acre.
Rummell and his neighbor,	1	
Bonig " " "	1	
Grehly " " "	$\frac{1}{2}$	
Maurer	$\frac{1}{4}$	
Zimmermann,	$\frac{1}{4}$	
Levenhard,	$\frac{1}{2}$	$\frac{1}{2}$
Reifenstahl,	$\frac{1}{2}$	$\frac{1}{2}$
Taubner,		1
Heck,		1
Sundry vineyards in all,	4	4
In all 16 acres,	$8\frac{1}{2}$	$7\frac{1}{2}$

Product of Hermann for 1848, about 10,000 gallons, and $1 50 per gallon for good qualities have been offered and refused.

Mr. Poeschel has made 1,200 gallons of best quality of wine of 5-6 of an acre, and 600 vines.

From 20 to 30 acres will be trenched and prepared for vineyards.

Near St. Charles, there are several acres of vineyards in a productive state.

In and near St. Louis, there are some 5 acres or more, in small parcels, which will come into bearing in 1849.

Monroe county, Illinois—Mr. Mendell and a neighbor have in all about 3 acres planted in vine; the former has made about 200 gallons from 200 vines.

In St. Clair county, Illinois, there are certainly from 15 to 20 acres in vine, which will all be in bearing the coming season.

Among the principal cultivators, are Messrs. Engelmann, Hillgard, Huff, Weiseborn, Reinbold, Finklach, Schilling, &c.

In Madison county, Illinois, Messrs. Kuffle about one acre.

In Highland, Dr. Ryhmer, one; all others, about two. Total, five acres.

The rot has completely destroyed the crop of 1848 in that neighborhood.

Besides these, there are some vineyards near St. Genevieve, and some very good hock has been received here from Mr. Root, of that place. Some very good grapes have long been cultivated by the old French inhabitants there, which are said to be hardy, and annually productive, and in the opinion of Mr. A. Valle, "the best to be found in the west for the table."

The medium through which the foregoing facts are derived, is a sufficient guaranty for their truth; but, unhappily for our present purpose, the report does not embrace the facts which we most desired to obtain. The grape crop of Missouri in 1848, so far as the results are stated, was surely sufficient to satisfy the most extravagant desire; and if such results could be relied on through a series of years in succession, Missouri might challenge the world for a rival in grape growing.

But, information respecting the certainty of the crop, must be obtained, before prudent individuals can be expected to embark in the cultivation of grapes in Missouri; and we trust that some of our readers will furnish us with reliable facts respecting this important point.

The climate, the diversified topography and soil of southern Missouri, indicate this as the most favored wine producing district in the valley of the Mississippi; and if, when fairly tested, it should prove equal to our anticipations, we venture the prediction that, before many years, wine will become one of the most important staples of our State.

It is shown, by the report of the Secretary of the Treasury, that the wine imported into the United States, in the year ending the 30th of June, 1847, was valued at the custom house at $1,807,621; and the brandy imported, during the same period, was valued at $931,082—making the imports of the products of foreign vineyards, $2,738,703 in that year; but the duties paid to government, and profits to dealers, will increase the cost to consumers to at least $5,000,000 per annum. It is a fact well understood by every intelligent individual, that all our agricultural staples have reached a point, beyond which the quantity cannot be enlarged, without depressing the price. Indeed, it is generally conceded that a small crop of cotton, tobacco, or hemp, brings more money to the producers than a large one. In such circumstances, it is surely our true policy to divert a portion of our surplus labor to the production of wine—at least to the extent of our own wants. But scarcely anything appears more difficult than to induce our farmers of American birth, to adopt new pursuits, and of this we have an illustration in the foregoing report; for, judging from the names there mentioned, it would appear that the cultivation of the vine is at present confined to our own German population, exclusively; but the President of the St. Louis Horticultural Society expresses the opinion that, when the profits of this business shall be made known, nothing but the "California fever" will prevent our own countrymen from entering into it. This would seem to be a rational conclusion; but the people of the west possess no genius for pursuits that require scientific and patient observation; they are too restless and impatient to cultivate any plant that will require more than one year to produce its fruit; and as much as we desire to see our American population enter into this branch of industry, and enjoy its benefits, yet we believe that this, the most interesting of all rural employments, is reserved for the emigrants from Germany, and other parts of Europe. Be it so! Our native citizens have chosen those parts of the country congenial to their own tastes and habits; and, if they have left the most interesting portion to the enjoyment of foreigners, no one has a right to complain, and we shall rejoice to see the resources of the country developed, although our citizens of foreign birth only should reap the immediate benefits.

N. Longworth, Esq., of Cincinnati, who has devoted more attention to the vine than, perhaps, any other invividual in the United States, concludes his communication to the Commissioner of Patents, with the prediction that "the day is not distant, when this (Cincinnati,) and neighboring portions of the Ohio river, will rival the Rhine in the

quantity and quality of its wine." But, if we are warranted in forming an opinion from the limited experiments made in Missouri, we must conclude that this is a far more favorable region for the grape, than that around Cincinnati.

ART. VI.—SHEEP HUSBANDRY.

We have received an interesting communication from H. Ancrum, of Ashly, Pike county, Missouri, on the subject of sheep husbandry; but, owing to the want of room, arising from a previous arrangement of matter for the present number, we have taken the liberty of condensing the substance of the article into as small a space as practicable. The object of the writer is to call the attention of capitalists and others to the subject of "sheep husbandry" in Missouri, and to offer such advantages as will induce them to join him in prosecuting this branch of industry, on a large scale. We have no acquaintance with Mr. Ancrnm, but find an excellent communication over his name, in the Patent Office Report of 1847, on "wool matrasses," and we have no reason to doubt his being trustworthy and competent to do what he proposes in regard to sheep husbandry. He states that he has, "at a great sacrifice, placed himself in a position to do the sheep business on the largest scale. That he is qualified, in every respect, by twenty years experience in Europe, and nine years in this country; that he possesses one of the finest situations in the United States for carrying it out on a large scale, and that the climate of that part of Missouri is particularly favorable to sheep. He has studied all the collateral branches of science connected with the economy of sheep husbandry, including scientific agriculture—the science of nutrition, physiology, anatomy, comparative anatomy, pathology, &c., and believes that he can add at least two years to the profitable existence of the animal; that, by his knowledge of the properties of food, and of the general management of sheep, he can greatly increase the secretions of wool; that he has been laboring twenty years to perfect his system, and has ransacked Europe and the Unlted States for information.

Mr. Ancrum is willing to take single flocks to be tended and kept on the joint account of himself and the owner; and, to such individuals as may not care to examine the annual accounts, he will pay ten per cent. per annum on the value of their flocks, and adds that he has "a mode of insurance by which the capital can never be lost."

We have not room at present to discuss the importance of wool growing; it is sufficient to remark that, with all the discoveries and improvements of the age, no substitute has yet been found, that is likely to supply the place of wool to any considerable extent, especially in the variable climate of the United States; indeed, it may be regarded as an article essential to the comforts of civilization, and we sincerely hope that our correspondent will receive such encouragement from the people of the west, as will fully reward him for all the labor which he has devoted to this important branch of industry.

COMMERCIAL STATISTICS.

IMPORTS INTO ST. LOUIS FOR FIVE YEARS,

Commencing January 1, 1844.

ARTICLES.	1848.	1847.	1846.	1845.	1844.
Bacon, casks	24039	12472	12631	8620	11208
Beef, bbls	14100	10254	12346	7029	4172
Bagging, pieces	1019	1432	3299	6036	4694
Bale Rope, coils	11130	10798	5802	9229	14316
Barley, sacks	27033	35527	13212	15128	7005
Buffalo Robes, bales	8785	7782	5976	3567	3598
Beeswax, bbls	426	759	532	531	577
Beeswax, sacks	967	798	827	599	928
Corn, sacks	388502	478449	352381	44341	25270
Coffee, bags,	73770	77767	60450	46802	43476
Cotton Yarn, boxes, bags	12569	15147	17726	15322	13716
Flour, bbls	377703	435019	223670	132196	96202
Fish, bbls	3710	3484	1572	4006	1970
Fish, kits	2710	2734	2620	1492	1642
Hemp, bales	48573	81525	34738	30985	62732
Hides	47099	71877	84980	72918	42802
Iron, bundles	20713	15695	22651	13238	11647
Iron, bars	116252	91513	63712	59697	57316
Iron, tons	1678	17016	1716	964	880
Lead, pigs	677710	767656	763489	757908	621900
Lard, bbls	76048	31005	24542	8502	15792
Lard, kegs	13119	12247	19351	5362	19709
Liquors, casks	2983	3192	3122	2638	1752
Molasses, bbls	27245	21554	16774	11876	12068
Nails, kegs	45687	22789	33303	14831	23183
Oats, sacks	86719	101203	59620	21969	21916
Oil, Lard, bbls	569	478	274	292	688
Oil, Linseed, bbls	784	485	866	810	449
Oil, Castor, bbls	309	332	230	48	97
Oil, Sperm, casks	193	186	169	169	81
Pork, bbls,	94582	45922	15613	16199	46836
Pig Metal, tons	3978	2263	2504	1303	1110
Rice, tierces,	1299	762	8666	708	518
Sugar, hhds	23064	12661	13898	10237	10738
Sugar, bbls,	6852	4083	4917	3193	2679
Sugar, bxs	5068	15028	1090	1053	1607
Salt, T. I., sacks	56642	22983	15823	20278	49683
Salt, G. A., sacks	167079	92809	107581	82520	86001
Salt, Kanawha, bbls	48788	44380	62189	21684	14277
Salt, L. B., sacks	26687	17632	28478	20387	17454
Spirits Turpentine, bbls	1365	619	740	317	419
Skins, deer, bales,	2678	2697	1609	1862	1283
Seed, flax, bbls	5345	4992	4081	2045	4273
Tobacco, hhds	9158	10935	8767	12856	10013
Tobacco, bxs	5016	9692	6676	7372	4823
Tallow, bbls	2324	2217	1754	1705	5331
Tar, bbls and kegs	12051	5656	5235	4942	5141
Wool, bales	1398	2107	1903	1899	1377
Whisky, bbls	30492	30247	29832	29445	24147
Wheat, bbls	20360	97123	81350	77150	54887
Wheat, sacks	1006960	1222433	743491	382323	257632

EXPORTS FROM ST. LOUIS, FOR FIVE YEARS,

Commencing January 1, 1844.

ARTICLES.	1848.	1847.	1846.	1845.	1844.
Bacon, assorted, casks,	29206	14085	13641	7628	14963
Bacon, bbls,	6731	4092	4916	7788	6207
Bacon, bulk, tons,	1113	675	569	148	292
Beef, bbls,	16008	12798	20113	5324	5694
Bagging, pieces,	4217	3363	4784	8182	4248
Bale Rope, coils,	13362	12632	10016	12896	22431
Beeswax, bbls,	667	624	913	1219	1576
Beans, bbls,	4528	4490	4408	2170	1448
Buffalo Robes, bales,	5322	3879	3630	2716	7404
Corn, sacks,	314894	395683	243026	23478	25191
Flour, bbls,	412672	448614	359858	202790	130274
Hides,	39728	73586	44962	50828	57220
Hemp, bales,	40393	65752	31352	29604	52654
Lead, pigs,	557644	591791	663505	637033	553719
Lead, bar, boxes,	2041	3136	2932	1850	4442
Lard, bbls,	95719	39513	26412	13318	25127
Lard, kegs,	28354	21344	32729	15691	36410
Oats, sacks,	103203	16957	41176	8434	7889
Oil, Linseed, bbls,	684	1007	522	— -	40
Oil, Castor, bbls,	873	933	1269	1231	1458
Oil, Lard, bbls,	2051	——	619	738	3337
Pork, bbls,	96656	56467	62820	22330	50225
Pork, bulk, tons,	2038	661	805	203	498
Rye, sacks,	4284	2250	1167	1750	4188
Shot, kegs,	2314	2506	4122	4216	3070
Skins, deer, packs,	2051	3700	2162	2687	2726
Seed, flax, tierces,	1655	660	1118	1306	3103
Tobacco, hhds,	8875	9881	8450	11284	9500
Tobacco, manufactured, bxs,	5963	4841	6183	7832	8844
Tallow, bbls,	846	2092	5955	1316	2313
Wheat, bbls,	9786	10318	16231	29796	16864
Wheat, sacks,	177013	640239	217319	68634	60894
Wool, bales,	1168	1414	1335	1326	1084

COMPARATIVE MONTHLY PRICES OF TOBACCO,

For the last five years.

MONTHS.	1848.	1847.	1846.	1845.	1844.
January	40 @$6 50	$3 00@3 25	$4 00@4 25	$3 00@3 25	$3 00@3 50
February	40 @ 6 50	3 00@3 25	3 75@4 00	3 00@3 25	3 00@3 50
March	40 @ 6 25	3 00@3 25	3 75@4 00	3 00@3 25	3 00@3 50
April	41 @ 6 50	3 00@3 25	3 75@4 00	3 00@3 25	2 50@3 00
May	77½@ 8 25	3 00@3 25	3 75@4 00	3 25@3 50	2 75@3 00
June	55 @ 8 25	3 50@4 00	4 00@4 25	4 00@4 25	3 75@4 00
July	40 @ 8 00	3 50@4 00	3 75@4 00	4 25@4 50	3 75@4 00
August	45 @ 8 25	3 75@4 25	3 75@4 00	4 25@4 50	3 75@4 00
September	55 @ 8 42	3 50@4 00	3 75@4 00	4 25@4 50	3 50@3 75
October	60 @ 9 41	3 75@4 25	3 50@3 75	4 25@4 50	3 50@3 75
November	50 @ 8 50	3 75@4 25	3 25@3 50	4 25@4 50	3 00@3 25
December	45 @ 8 00	3 75@4 25	3 00@3 25	4 25@4 50	3 00@3 25

COMPARATIVE MONTHLY PRICES OF FLOUR,

For the last five years.

MONTHS.	1848.	1847.	1846.	1845.	1844.
January	$4 68½@4 93¾	3 62@3 75	4 37½@4 50	3 62½@3 70	3 75 @4 00
February	4 08¾@4 34¼	4 62@4 75	4 00 @4 12½	3 60 @3 62½	3 75 @4 60
March	4 37½@4 66¼	4 37@4 50	3 87½@4 00	3 60 @3 62½	3 95 @4 12½
April	4 23½@4 43½	4 62@4 75	3 50 @3 62½	3 45 @3 50	3 70 @3 75
May	4 20 @4 32½	4 87@5 00	2 95 @3 00	3 65 @3 70	3 70 @3 75
June	3 70 @3 90	6 25@6 50	3 05 @3 10	3 65 @3 70	3 50 @3 55
July	3 86½@4 18¾	4 50@4 62	2 00 @2 25	3 70 @3 75	3 70 @3 75
August	3 46½@3 82½	4 62@4 75	2 50 @2 55	3 45 @3 50	3 75 @4 00
September	3 86½@4 40½	3 87@4 00	2 87½@3 00	3 00 @3 06¼	3 80 @3 90
October	4 09½@4 25	4 30@4 37	3 75 @3 80	3 12½@3 25	3 87½@4 00
November	4 12½@4 36	4 50@4 62	3 80 @3 87½	3 70 @3 75	3 56 @3 00
December	4 12 @4 34	5 00@5 25	3 75 @3 80	5 75 @6 00	3 75 @4 00

COMPARATIVE MONTHLY PRICES OF WHEAT,

For the last five years.

MONTHS.	1848.	1847.	1846.	1845.	1844.
January	Cts. 69 a87½	50a 62	70 a75	68 a70	65a70
February	59 a82½	80a 85	65 a68	60 a65	65a70
March	65½a92¾	65a 75	63 a66	68 a70	75a80
April	65¾a88½	80a 85	62½a65	65 a67	70a75
May	55 a82½	90a 95	63 a65	68 a70	70a72
June	52½a73¼	110a125	50 a52	68 a70	60a62½
July	48 a70	80a 90	38 a40	70 a73	50a56
August	46¾a66	75a 85	48 a50	50 a53	60a65
September	51¼a80	70a 80	50 a53	54 a56	65a68
October	49 a83¼	80a 87	60 a63	62½a65	60a62½
November	51¼a84	75a 85	57 a59	75 a80	70a73
December	60 a82½	77a100	58 a60	85 a90	67a70

COMPARATIVE MONTHLY PRICES OF CORN,

For the last five years.

MONTHS.	1848.	1847.	1846.	1845.	1844.
January	Cts. 29 a31	33a35	26a28	28a30	24a26
February	22¼a23½	35a36	24a26	28a30	25a26
March	19¼a21	45a50	25a26	28a30	25a26
April	17½a19	45a50	21a23	29a31	25a26
May	17 a18½	33a34	20a21	27a28	26a28
June	19 a20	43a45	19a20	27a28	26a28
July	21 a23	33a35	16a18	29a30	33a35
August	22½a24½	33a35	17a19	26a28	28a31
September	28 a29½	31a33	23a25	24a26	28a30
October	28¼a32	35a37	30a33	24a26	28a30
November	29¾a32¼	28a30	23a25	24a26	33a35
December	29 a31	28a31	28a30	30a35	30a32

COMPARATIVE MONTHLY PRICES OF HEMP,

For the last five years.

MONTHS.	1848.	1847.	1846.	1845.	1844.
January	$96 50a100	50a 60	65a68	58a60	70a75
February	80 00a 90	55a 65	58a60	58a60	70a75
March	77 50a 87	60a 70	58a60	58a60	76a80
April	75 75a 84	85a 95	52a55	62a65	73a75
May	70 75a 79 50	75a 85	48a50	68a70	70a73
June	71 50a 79	65a 72	48a50	68a70	60a65
July	79 50a 90 50	85a 95	46a48	70a75	58a60
August	90 00a100	90a100	48a50	60a70	65a70
September	92 50a102 50	90a100	44a46	65a68	70a72
October	96 50a107 50	105a115	46a48	60a65	65a68
November	101 00a111	105a120	48a50	65a68	63a65
December	100 00a111 25	100a110	56a60	62a65	60a62

COMPARATIVE MONTHLY PRICES OF LEAD,

For the last five years.

MONTHS.	1848.	1847.	1846.	1845.	1844.
January	$3 97½a4 03	3 87a4 00	3 70a3 75	3 25a3 30	3 00a3 03
February	3 75 a4 00	3 87a4 00	3 70a3 75	3 32a3 35	3 00a3 03
March	3 88¾a3 97½	3 80a3 85	3 40a3 45	3 10a3 12½	2 85a2 87½
April	3 45 a3 48	3 35a3 40	3 20a3 25	3 08a3 10	2 76a2 78
May	3 35 a3 37½	3 30a3 35	2 90a2 95	3 00a3 03	2 85a2 87½
June	3 34½a3 47¾	3 45a3 50	3 30a3 35	2 95a3 00	3 00a3 02
July	3 53¾a3 60	3 40a3 45	3 25a3 30	3 32a3 35	2 90a2 92
August	3 66 a3 70	3 35a3 40	3 15a3 20	3 25a3 30	2 93a2 95
September	3 75 a3 80	3 65a3 70	3 25a3 30	3 45a3 47	3 00a3 05
October	3 73¾a3 78½	3 87a4 00	3 48a3 50	3 68a3 70	3 10a3 12
November	3 68½a3 77½	4 05a4 10	3 70a3 75	3 80a3 85	3 45a3 50
December	3 85 a3 87½	4 00a4 05	3 80a3 85	4 00a4 03	3 25a3 37½

Arrivals of Steamboats at St. Louis, in each month, in the years 1846 *and* '47.

	From N. Orleans.		Ohio.		Illinois.		Upper Mississippi.		Missouri.		Other Points.		Cairo.
	1846	1847.	46	47.	46	47.	46	47.	46	47.	46	47.	1847.
January,	15	22	8	8	3	9	5	4	7	0	15	5	11
February,	33	15	24	16	42	8	31	8	1	1	21	6	10
March,	25	48	26	28	40	85	36	41	10	14	21	13	3
April,	27	77	35	41	44	91	55	74	20	32	14	12	1
May,	59	93	65	61	80	106	115	128	43	63	10	20	19
June,	36	49	52	37	51	60	98	91	47	48	11	13	8
July,	23	67	30	41	32	58	60	81	32	45	16	19	19
August,	32	24	44	37	32	41	56	51	29	32	18	24	10
September,	30	28	37	30	15	45	46	57	27	23	16	28	18
October,	32	22	48	67	41	57	61	80	18	31	37	34	18
November,	34	32	24	42	30	60	56	69	14	16	27	18	13
December,	49	25	27	22	36	38	44	33	8	9	26	12	16
Total,	395	502	420	430	446	658	663	717	256	314	232	201	146
" in '45,	250		406		298		547		249		167		

Arrivals and Tonnage of Steamboats, &c., at St. Louis, during the years 1847–8.

WHERE FROM.	1848. No. Steamboat arrivals.	1848. Measured tonnage of steamboats.	1848. Est. tonnage includ'g keels, flats, &c.	1847. No. Steamboat arrivals.	1847. Est. tonnage includ'g keels, flats, &c.
Illinois River,	710	101,391	140,000	658	104,000
Upper Mississippi,	619	198,510	211,000	717	151,000
Missouri River,	363	57,640	57,640	314	55,000
Alton,	615	84,454	38,200	201*	35,500
Coast,	105	23,120	12,000		1,800
Cairo,	136	28,403	29,000	146	14,000
New Orleans,	443	173,223	120,000	502	100,000
Ohio River,	506	103,546	83,000	430	75,000
Totals,	3497	770,287	690,840	2968	536,300

Recapitulation of the Number of Arrivals for four years.

In 1848, 3,497—in 1847, 2,968—in 1846, 2,412—in 1845, 2,017.

Amount of Steamboat tonnage owned in St. Louis, - - 35,579,76

" Barge " " " " - - - 3,535,41

The number of Steamboats built in St. Louis in 1848, was 7, and the amount of tonnage 2,746,76.

Number of Steamboats engaged in the St. Louis trade in 1848, 260.

*NOTE.—Arrivals from Alton and the coast were not reported separately in 1847, but are supposed to be included under the head of "other points."

Lumber, Shingles, &c., received in St. Louis in 1848.

Lumber, feet, 22,890,299; Shingles, 11,854,500; Laths, 1,701,005; Cooper Stuff, 1,322,196; Wagon do. 66,500.

Wood, number of cords measured, 39,865½.

Coal received and weighed at the different Scales in 1848.

Number of loads, 21,922, number of bushels, 1,623,687. An increase of 170,000 bushels over the quantity received in 1847.

Hay, aggregate number of loads weighed at the different scales, 7,254.

A TABULAR STATEMENT OF THE ASSESSMENT OF PROPERTY, RATE PER CENTUM, AND RECEIPTS OF THE TOWN AND CITY OF ST. LOUIS, FROM 1817 TO 1848.

Years	Assessed value of property.	Rate pr. centum.	Taxes assessed.	Taxes collected.	Merchants lic'ens's	Inns, taverns & drm shops.	V'hicl's	Other licenses.	City com'ns.	Water Works.	Wharf.	Other sources	Total revenue.
1818..	1218390 62	40-100	4873 56	700 00				200 00				407 11	1307 11
1819..	1132163 33	30-100	3396 49	4454 77				415 00				355 00	5224 77
1820..	1024440 00	35-100	3585 54	3486 77				450 00				227 81	4164 58
1821..	955050 00	40-100	3823 80	2211 62			142 50	425 00				421 87	3200 99
1822..	966170 00	40-100	3824 68	2228 44			158 00	473 66				574 62	3435 22
1823..	810064 00	50-100	4050 32										
1824..	1 28217 00	50-100	5137 54	7782 62	2312 07	1791 75	170 00				686 37	4418 25	17161 02
1825..	788168 00	25-100	1979 42	486 09	775 01	700 29		491 66			197 07	567 32	3217 44
1826..	1003876 0	25-100	2509 69	1281 07	776 63	1005 00	132 50	200 00			611 60	734 70	4741 50
1827..	1175380 00	25-100	2988 45	2108 40	2038 34	2880 00	152 50	1415 79			1607 71	1984 48	11387 22
1828..	1510332 00	25-100	3775 83	1750 91	1168 12	1650 00	295 00	921 00			1286 17	10365 60	17436 80
1829..	1906342 00	25-100	4765 95	3110 62	2398 33	2991 32	203 00	1295 33			1350 95	9310 62	20960 17
1830..	1830616 00	25-100	4576 54	1674 87	1567 50	2985 00	260 00	1278 47			1285 38	5245 67	14291 89
1831..	2080 62 00	16½-100	3466 77	2880 20	1805 00	4470 00	490 00	1830 57			1594 99	5583 52	18654 28
1832..	2338584 00	16½-100	3897 64	2274 55									
1833..	2196672 00	12½-100	2745 84										
1834..	2063688 00	12½-100	2759 61	818 06	1982 50	3825 00		2147 50		5255 28	3236 90	7281 40	24546 64
1835..	2221888 00	37½-100	8337 08	3827 16	2490 75	3950 00	1257 12	2022 00		4746 69	5151 32	8050 69	31595 65
1836..				11614 63	3930 00	4845 00	1275 83	2220 40	217 20	5338 21	9485 26	5554 61	44481 14
1837..	7425618 00	33½-100	24752 06	22924 83	7162 00	8225 00	1110 30	4820 00	10139 58	8372 13	10649 43	14802 77	88206 04
1838..	8169657 00	40-100	33408 75	28257 79	4735 25	7550 00	1690 00	4431 75	6655 88	12694 11	10441 97	13710 41	90167 16
1839..	7731260 00	50-100	39000 55	48738 54	5671 25	8075 00	2050 00	5271 25	14190 39	20517 25	11716 76	23948 43	140178 87
1840..	8573662 00	50-100	43291 56	40195 96									
1841..	8957198 03	50-100	45088 61	39408 57	7876 50	8450 00	2200 00	5942 50	5322 21	14954 31	15187 16	29322 08	128366 07
1842..				42113 55	7314 00	6200 00	2500 00	9322 00	5919 81	12507 81	14115 19	36152 68	136145 04
1843..	8308489 41	87½-100	74795 23	92683 51	6581 98	5413 50	2526 00	10835 80	30857 27	13402 10	17407 86	14463 76	193771 78
1844..	13380923 30	87½-100	122411 82	146774 19	9497 50	6375 00	2438 00	5927 50	19961 39	14518 69	20739 25	18578 11	214809 63
1845..	14519591 53	1 per ct.	145185 91	145672 26	8167 50	6730 00	3128 87	5817 00	15784 23	15442 47	22449 23	19925 07	243117 13
1846..	15202120 37	1 per ct.	152021 20	143513 31	10275 00	10135 00	4212 00	6734 99	22475 56	17858 50	25210 44	18142 04	258556 84
1847..	16665145 75	1 1-20	174983 99	170629 63	12555 00	8350 00	4966 00	7925 00	11323 49	25638 48	31231 05	19840 40	293359 05

THE PUBLIC DOMAIN.—From the report of the Commissioner of the General Land Office, it appears that the public domain comprises as nearly as can be estimated from official data, 1,442,217,197 acres. This much remained of the property of the country on the 30th of September last, after having disposed of 142,026,003 acres. The great body of it lies in the territories west of the Mississippi river and east of the Rocky Mountains, as in Oregon, New Mexico, and Upper California.

The quantity remaining undisposed of in the several States, is as follows:

	Acres.
Ohio,	876,466
Indiana,	3,572,645
Illinois,	15,693,076
Michigan,	25,097,296
Wisconsin,	28,863,773
Iowa,	27,868,038
Missouri,	29,766,740
Arkansas,	27,655,740
Louisiana,	23,677,775
Mississippi,	11,815,040
Alabama,	17,516,346
Florida,	36,137,437
Total,	248,500,372

Oregon contains	341,468	square miles, or	218,536,320	acres.
California "	448,691	" "	287,162,240	"
New Mexico "	77,387	" "	49,527,800	"

Quantity of private claims in these sections not ascertained.

There have been brought into market during the past year, 9,459,641 acres. It is estimated that about 9,113,400 acres will be proclaimed for sale during the present year.

In 1847, the quantity of land sold was 2,521,305 acres; and the amount of purchase money was $3,296,404 08. During the first three quarters of 1848, the quantity sold was 1,448,240, and the purchase money was $2,030,668. The whole quantity disposed of during these periods, *by sale and location of bounty land warrants*, was 5,887,550.

ANNUAL REPORT ON THE STATE OF THE FINANCES OF THE UNITED STATES.

The receipts and expenditures for the fiscal year ending June 30, 1848, were—

From customs,	$31,757,070 96
From public lands,	3,328,642 56
From miscellaneous sources,	351,037 07
From avails of loans and treasury notes,	21,256,700 00
Total receipts,	56,693,450 59
Add balance in the treasury, July 1, 1847,	1,701,251 25
Total means,	58,394,701 84

The expenditures during the same fiscal year were -		58,241,167 24
Leaving balance in the treasury, July 1, 1848, of -		153,534 60

The estimated receipts and expenditures for the fiscal year ending June 30, 1849, are—

From customs—1st quarter—by actual returns, - -		$8,991,935 07
From customs—2d, 3d, and 4th quarters—as estimated		23,008,064 93
		32,000,000 00
From public lands, - - - - - -		3,000,000 00
From miscellaneous sources, - - - -		1,200,000 00
		36,200,000 00
From loans and treasury notes—1st quarter—by actual returns, - -	$10,127,200 00	
From loans and treasury notes—2d, 3d, and 4th quarters, - -	10,568,235 30	
		20,695,435 30
Total receipts, - -		56,895,435 30
Add balance in the treasury, July 1, 1848, - - -		153,534 60
Total means as estimated,		57,048,969 90

EXPENDITURES, VIZ:

The actual expenditures for the 1st quarter ending September 30, 1848, were - - - - - -	$17,866,104 91	
The estimated expenditures during the other three quarters, from October 1, 1848, to June 30, 1849, are—		
Civil list, foreign intercourse, and miscellaneous, - - - - -	12,169,354 61	
Army proper, &c., - - - -	10,464,809 80	
Fortifications, ordnance, arming militia, &c., - - - - - -	1,846,697 29	
Indian department, - - -	1,589,158 18	
Pensions, - - - - - -	722,706 12	
Naval establishment, - - - - -	6,089,032 56	
Interest on public debt and treasury notes,	3,585,422 28	
Treasury notes outstanding and payable when presented, - - -	161,989 31	
		54,195,275 06
Leaving a balance in the treasury, July 1, 1849, - -		2,853,694 84

COINAGE AT THE MINT OF THE UNITED STATES.

Amount of coinage at the mint and branches to the 31st December, 1846,		$122,480,322 42
Coined during the year 1847,		22,655,206 57
Total to 31st of December, 1847,		145,135,528 99
COINED DURING THE YEAR 1848.		
January,	$628,895 55	
February,	332,101 86	
March,	518,520 33	
April,	477,609 29	
May,	287,065 87	
June,	332,065 97	
July	419,052 55	
August,	398,607 87	
September,	651,282 38	
October,	411,464 50	
		4,456,666 17
Total amount of coinage to November 1, 1848,		149,592,195 16
Total coinage, from March 1, 1845, to November 1, 1848,		38,717,909 25

COTTON MILLS AT CANNELTON, INDIANA.

We have received the prospectus for the publication of a paper at Cannelton, Indiana, by Charles H. Mason, from which we are pleased to learn that "fifty or more gentlemen of extended influence, high standing, large capital, and residents of six States, have united under the most approved system of association, and determined to transfer the best features of the factory system to this position. The mills they are erecting are intended to be, not only productive of individual profit, but models for imitation."

This movement may be regarded as among the most important events in the history of the Mississippi Valley; for an association of so large a number of individuals, possessing the character and means attributed to these gentlemen, must challenge the consideration of capitalists not only in this, but in other countries also. And should success attend their enterprize—of which there can scarcely be a doubt—we predict that in less than twenty years from this date, a larger quantity of cotton will be shipped up the Mississippi and its tributaries to be manufactured, than to New Orleans for exportation. The age is pregnant with great events, and where else shall we find a theatre so well adapted to their exhibition, as this broad Valley? And when the advantages of manufacturing shall have been fairly tested here, and made known to the world, their growth will not be less wonderful than has been the increase of agricultural products in the most favored part of the country.

The "*Economist*," for such is the title of the paper proposed to be published at Cannelton, "although chiefly devoted to the manufacturing interest," will nevertheless embrace in its design the interest of every industrial pursuit calculated to develop the resources of the country.

As pioneers in this great work, we rejoice in the prospect of a coadjutor, and sincerely hope that his success may be equal to the importance of the cause which he has undertaken to advocate.

NEW PERIODICALS.

"VALLEY FARMER," published by *Pickering, Penn & Co.* at No. 35 Locust street, St. Louis, Mo. Edited by H. GATES and E. ABBOT.

Mr. GATES is known to us as the Editor of the Iowa Farmers' Advocate, which he lately conducted with industry and ability. Having removed to this city where the facility of collecting matter is greater, we are prepared to expect a publication of more than ordinary interest, and feel fully warranted in recommending the "Valley Farmer" to the agriculturalists of the west, as a work highly worthy of patronage. It is published monthly at one dollar per annum—a price so small that it is surely in the power of every farmer to subscribe without inconvenience.

"THE WESTERN REGISTER, a monthly Journal of Commerce, Navigation, Science and the Arts. Published by *L. Pickering & Co.*

The first number of this work is devoted principally to commercial and other interesting statistics. It contains 32 pages, and is published at $1 per annum.

"THE ST. LOUIS MAGNET. Designed to illustrate the Philosophy of Human Nature. Doctors T. J. M'NAIR, J. C. HEBERLING, and F. G. SITTON, Editors and Proprietors.

The January number is the commencement of the second series of a work formerly edited by Dr. M'NAIR. The Doctor is an original, and rather a bold thinker, and his writings are calculated to interest the curious inquirer into the economy of Nature.

ACKNOWLEDGMENTS.

We have received the *Southern Quarterly Review* for October, 1848. This is a number of sterling merit, and fully sustains the high character of the work. We beg to recommend this standard periodical to the patronage of our readers.

Southern Literary Messenger.—The last number of this excellent periodical contains, as usual, much interesting matter. Wherever we find this work in a family, we consider it a mark of good taste.

Hunt's Merchants' Magazine for January has been received. To the merchant, and indeed to men of every profession, this will be found a most interesting number.

De Bow's Commercial Review for December, is one of his best. This work deserves the patronage of the south and west. We shall be pleased to see it again on our table.

Michigan Farmer.—This excellent agricultural work comes to us enlarged, and we sincerely wish that its patronage may increase in proportion.

The Western Law Journal for January, is an excellent number. We beg to recommend it to the members of the bar throughout the country. We have also received from the Hon. T. WALKER, one of the Editors, an able treatise on the Rights of Women.

THE

WESTERN JOURNAL.

M. TARVER and T. F. RISK, Editors and Proprietors.

VOL. II. MARCH, 1849. NO. III.

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THE

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ART. I.—INCREASE IN THE QUANTITY OF GOLD—ITS EFFECTS.

No age since the christian era, has been so fruitful in events calculated to ameliorate the condition of man, and incite him to the attainment of a higher degree of civilization, than this in which we live. And these events follow in such rapid succession, that while we are yet admiring some brilliant discovery, and contemplating the benefits which are likely to result from it, our speculations are arrested by the announcement of some other, perhaps still more imposing, and not less important. What wonderful agents are steam and electro-magnetism! And did we not know that power has been given unto man to subdue the earth, we might conclude that he had reached the utmost limit of discovery in the field of natural science; but these great agents are to be regarded only as pioneers, to open the way in his march to a higher destiny; for, doubtless, other agents, not less potent and useful than steam and electro-magnetism, remain yet undiscovered.

The relations between the physical and moral world have not been sufficiently observed, to enable us to determine how far, or in what degree, a discovery in the science of one, is calculated to enlighten us in regard to the other; but we may safely affirm, that every discovery that is calculated to enlarge the means of human comfort, without increasing the amount of labor, must tend to improve the moral condition of mankind; and it is a provision in the economy of nature, not less beautiful than benevolent, that although an individual may have been prompted by motives purely selfish, to spend his life in the search of some valuable discovery, yet, whatever he achieves in natural science, enures to the general benefit of the race, and all who choose may enjoy the fruits of his labor.

We have been lead into these reflections, in connection with such as are suggested by the accounts of the recent discovery of gold in California, not because of any merit involved in this discovery, but for the reason that it is associated in the mind, with the other great events of the age. And if the quantity of gold should correspond with the reports received from that region, it will be calculated to give still greater force and efficiency to the many useful discoveries in natural science, which have already produced such astonishing results.

Considered simply as a metalic substance, an increase in the quantity of gold—no matter how great—would be of little importance in the private or political economy of this or any other country. Its abundance would but serve to lower the estimate which mankind place on it for ornamental purposes; and, entering into commerce, its price, like that of other metals, would be governed mainly by the cost of its production. But when considered as money—the representative of the value of all other commodities—an agent of exchange recognized and accredited by all civilized nations—it is obvious that any great degree of increase or diminution in the quantity, is calculated to affect the business and social relations of every country; more especially if such increase or diminution should suddenly occur. But so many facts and circumstances are necessary to be known and considered, in connection with the question of increase or diminution, that it would be impossible to predict, with any degree of certainty, the nature and extent of the effects that either would be likely to produce. The general laws are plain and easily comprehended; but the modifications are infinite, and in most cases are not perceived, until brought to our view by the exigencies that daily arise.

All commodities are priced with reference to the amount of money which it is supposed they would command if brought into market; but as a very small part of the property of a country is in market at any one time, the numerical amount of money bears but a very small proportion to the aggregate price of other commodities. In the United States the proportion is about one of specie to seventy-five of other commodities, including lands and their products. The amount of specie in this country is estimated at about $100,000,000, about five dollars to each individual; nearly one-half of this is reported to be in the banks. The paper currency is estimated at about $125,000,000, or six dollars to each individual, making the total circulation about $175,000,000, or eight dollars and fifty cents to each individual. Now, supposing the *placers* of California to produce $100,000,000 per annum for a series of years, it would be highly important that we should be able to form some rational conclusion respecting the influence that so large an accumulation of the precious metals would have on the prices of property, and the business relations of the country; otherwise we should be in great danger of running into speculations which would bring disasters upon the country that would overbalance the benefits derived from an augmentation in the quantity of gold. If in the period of one year the prices of property and labor were to advance fifty per cent. throughout this country, it is obvious that it would close our manufacturing establishments; suspend the production of iron; and put an end to the exportation of breadstuffs, if indeed it did not invite the importation of wheat from Europe. Such a state of things, however, could not long exist, for it would require more gold than we shall probably ever get from California, to supply the drain from the country, that would be occasioned by such an event. Some intelligent individuals seem to entertain the opinion that were the quantity of specie in the United States doubled, the prices of property would advance in equal proportion: no error, we think, would be more fatal to the prosperity of this country than that of acting in ac-

cordance with this proposition. It is an inherent property of money to seek the best market, and, unless in some way restrained, it is diffused throughout the commercial circle of the civilized world by laws as certain as that which compels the mountain stream to the ocean, where all the waters find their level. Were the coinage of the United States increased to $100,000,000 per annum, it would doubtless make money more plenty in this than in any other country, as long as this extraordinary product continued; but when the amount received from the mines should begin to diminish, money would again become scarce, and as the mountain stream, swollen by a summer shower, shrinks into its natural channel as soon as the rain ceases, so would this flood of gold soon be lost in the great ocean of commerce, and no more would remain than by the laws of its circulation would be required to represent the property and labor of the country.

Although the quantity of money may not bear the same proportion to the population in different countries, yet the peculiar wants and pursuits of each nation require a certain portion of the entire sum contained in the world; and if from any cause the amount thus required should be diminished, it affects not only the country which suffers the loss, but all others with whom it carries on an exchange of commodities are in some degree affected also. But a vacuum thus occasioned by an extraordinary demand, cannot long remain; for if the people continue to prosecute their former pursuits, and their general economy should undergo no change, a reflux would take place until the country again obtained its due proportion.

Hence, in calculating the effects resulting from an augmentation in the quantity of the precious metals, we should endeavor to ascertain the proportion that the accumulating sum bears to the total amount in existence. We are not aware that any government has adopted means of ascertaining the quantity of gold and silver within its jurisdiction, and the estimates that have come within our observation, vary so widely, that they are entitled to but little respect. We notice in the Merchants' Magazine, for February, 1849, an article from the Bank Note List, published in Boston, in which it is stated that "the amount of gold and silver in the world is generally estimatsd at ten thousand millions of dollars." This estimate is, doubtless, too large, for if we adopt Malte Brun as authority, respecting the population of the earth, this sum would amount to more than $15 to every individual in existence, including both civilized and savage nations. The Liverpool Journal estimates the amount of money in existence at £800,000,000, about $4,000,000,000. This may not be far from the truth; and if we adopt it as a data for calculation, we shall find that an increase of $100,000,000 would add only about 2½ per cent. to the quantity in existence, a rate of increase that would scarcely be perceived, when diffused throughout the channels of commerce.

Still, as we have before remarked, so long as the current continued to flow through this country, it would be far more abundant here, than in any other part of the commercial world; and this abundance would doubtless tend to depress its value; but this tendency might be counteracted, perhaps, entirely, by the increased activity that would be imparted to business—for, by increasing the number and amount of ex-

changes that take place in other commodities, more money is required; and hence it does not necessarily follow that an increase of money depresses its value. We have shown that the specie and paper circulation in the United States, is about $8 50 to each individual. We learn from a statement exhibiting the amount of paper circulation in this country, published about twelve months since, that the State of Massachusetts had a circulation of $23 42, and Rhode Island of $26 05 to each individual—assuming the census of 1840 as the basis of calculation—while we imagine that the circulation of Missouri, including both specie and paper, does not exceed five dollars to each individual; and yet, we believe that common labor is about as high in Missouri as in Massachusetts. This is, doubtless, owing to the fact that a much larger number of transaction requiring money, take place in Massachusetts, in proportion to the number of its inhabitants. In manufacturing establishments, the operatives are paid weekly; money is daily required for the purchase of material; board is paid at short intervals, and the products of the establishment are continually in market; and so great is the demand for money to effect all these exchanges, that notwithstanding its abundance, it affects but slightly, if at all, the price of labor. Agricultural districts require much less money than manufacturing; for where the farmer or planter carries on business with his own labor, much the larger part of the means of subsistence and of comfort are produced at the place where they are consumed; and consequently, no money is required, as an agent, to procure the means of daily subsistence. The increase of manufactures, and the construction of works of internal improvement, demand an increase of money; and it is not likely that, if these two great interests should be wisely encouraged, that we shall ever receive gold enough from California to depress its value; and unless the sudden influx should be the cause of inciting a spirit of speculation, it will, instead of breaking down, be the means of building up manufactures in this country. It will also enable us to extend our works of internal improvement, without the aid of foreign capital; and thus, instead of transmitting the profits arising from these works abroad, for the benefit of foreigners, the dividends will remain at home, to be enjoyed by our own people. If we desire to retain an increased quantity of gold in this country, we must enlarge those branches of industry that require its use, and create new commodities, such as railways and other works of improvement, that will not only require money in their construction, but which will also require a certain quantity to represent their value, when completed. Should we fail to do this, a great influx of gold would only serve to raise the prices of property and labor, and this would drive it out of the country as fast as it came in, and tend to check rather than to promote its prosperity.

Reasoning from the hypothesis that the quantity of gold in California is as large as it is represented, it must be admitted that we are about to enter upon a new and untried state of things—one that calls for the profoundest reflection on the part of the statesman, the philosopher, and the man of business. Much will depend on the policy of the general government, in regard to the privilege of collecting the metal. Gold washing is a business that can be carried on success-

fully, without any other capital than a willing mind and a strong arm; and it is doubtless the true policy of the government to prevent the gold lands from falling into the hands of capitalists and speculators. Let the government allow every one to work who will, and for once in the history of man, give to the operative the full benefit of his labor, after charging a reasonable compensation for protecting him in the enjoyment of this privilege. The views of a distinguished Senator from Missouri, expressed on this subject in the Senate, a few days since, so fully coincide with our own, that we extract the following paragraph from his speech, as published in the Cincinnati Gazette. Speaking of the gold lands, he says:

"Instead of hoarding, and holding them up, and selling in driblets, lay them open to industry and enterprise. Lay them open to natural capital—to labor—to the man that has stout arms and a willing heart. Give all a fair chance. It is no matter who digs up the gold, or where it goes. The digger will not eat it, and it will go where commerce will carry it. The nations which have industry—which have agriculture and manufactures—they will get the gold, provided always, that they keep out small paper money. Not sales, but permits, is the proper mode to follow, and the only practicable mode. People are going to California to dig, and dig they will. A wise legislation would regulate, not frustrate their enterprise."

These views are sound and statesman-like, and we trust that they will be adopted by the national legislature. But we cannot sympathise with the honorable Senator in his regret "that we have these mines in California." It may be true, as he states, that gold mining "is a pursuit which the experience of all nations shows to be both impoverishing and demoralizing to a nation;" but we are not prepared to admit that poverty and immorality are necessary consequences of mining for gold. The principle involved in the use of money may be regarded as essential to a state of civilization; and it is difficult to conceive how man could have emerged from a state of barbarism, without its use; and it would be inconsistent with the attribute of Divine benevolence, to suppose that this essential agent of civilization could not be obtained without incurring the penalty of degradation to those who, happening to possess the country in which it is found, are the first to collect it for the benefit of their race. And should we admit what is generally believed, that the gold and silver mines of America impoverished and degraded Spain, from the highest to the lowest point of civilization among christian nations; yet, before coming to the conclusion that the same cause will produce similar effects in this country, we should take into consideration the genius of the people that compose these respective nations; and also, the political, religious, and social institutions by which the one has been governed for the last three centuries, and which govern the other at the present day. During the age of gold, the government of Spain was a monarchy; and a high military spirit mingled with a religious devotion, constituted a prominent trait in the character of the Spanish people. Few discoveries had then been made in the principles of labor-saving

machinery; the power of steam was unknown; and the idea of internal improvements, for the purposes of internal commerce and travel, does not seem to have occurred to the people of that age. And hence, few, or no great objects of profitable improvement existed. Enormous sums were appropriated to the erection of palaces, churches, and fortifications; but these lacked one of the essential qualities of property —they were not transferable; and therefore required no money to represent their value when completed; and there being no increase of commodities at home, to represent the increase of the precious metals, they went, in despite of all restrictions, in search of a foreign market; and when the mines began to fail, Spain became poor, because she had neglected the improvement of her soil, and had done nothing to increase the volume of useful commodities. And a reliance on foreign commerce, and the love of adventure in search of the precious metals, having unfitted her people for those industrial pursuits so essential to a high state of civilization, she became degraded as a natural consequence. But, happily for us, we live under institutions far more favorable to the advancement of civilization. The genius of the age prompts the human mind to the discovery of new agents in the production of useful commodities—to enlarge and diversify the means of subsistence and of comfort—to break down the natural barriers that have been supposed to obstruct human sympathy, and make enemies of those who dwell on different sides—to extend the social horizon and fraternize the inhabitants of every clime, by bringing them in closer communion with each other. The prosecution and consummation of these great objects, demand an increase of the precious metals, and we rejoice that they have been discovered so opportunely. And free from all apprehension that this discovery will impoverish or demoralize the nation, we say with the distinguished Senator from Missouri, "lay the mines open to industry and enterprise;" let gold flow freely throughout the land—it will be found a most potent agent in building up manufactures—in constructing railroads—in stimulating agriculture—in opening the mines of coal, of iron, of copper, and other useful metals; and although the quantity should be as abundant as indicated by the most favorable report, yet it will not be too great for the development of our vast resources; nor more than sufficient to represent the increased amount of property which it will be the means of creating. In the beginning, however, it will doubtless be the cause of disturbing, to a greater or less extent, perhaps every branch of business. The number of ships already taken up for California, has seriously affected the price of freights, and will, consequently, affect the price of produce; but it will favor manufactures and tend to build up a home market. The want of vessels, however, cannot long continue; for the ship builders will soon supply the demand; and thus, we perceive, that already an increase of money is required to represent the value of several hundred vessels, before the gold has reached the States.

Should the mines turn out as productive as they are represented, the first influx of considerable quantities of gold will, doubtless, incite a spirit of speculation; and we have more to apprehend from this than from any thing else connected with the discovery; but this is an

evil that cures itself, in time, and though much to be deprecated, is not altogether void of good; for a spirit of speculation frequently prompts men to undertake enterprises that might otherwise have slumbered for ages; and although they may fail for a time, yet, perhaps, enough is done to establish their practicability and usefulness, and thus open the way to the consummation of some important improvement.

We freely admit, however, that gold mining is unfavorable to the moral *improvement* of those who are immediately engaged in it; but we do not admit that there is any thing in the employment calculated to *demoralize* an individual whose moral principles are sound and well established. Unhappily, however, a large portion of mankind, and more especially of such as engage in gold mining, are governed more by the ordinary observances and conventional restraints of society, than by principles that may be called their own; and when these observances and restraints are removed, as must be the case when a large number of men are collected together in the mountains and forests, they are left with no better guide for their actions than their selfish propensities, and doubtless become more licentious; but this is owing to a change of circumstances rather than to a change of morals. From this cause, the social condition of California is likely to suffer deterioration as long as the mines continue highly productive. Nor can the agricultural resources of the country be developed as long as labor continues at present prices; and hence, so far as the people of California are concerned, we agree with Senator Benton, that the sooner the mines are exhausted, the better for them.

The settlement of Oregon and California by a civilized race, completes the circle of civilization around the globe, in the temperate zone of the northern hemisphere, and is certainly to be regarded as an important era in the social history of man. Had those regions contained no other inducements for settlement than such as the soil and climate afforded, the growth of their population would have been slow, and generations might have passed away before our possessions on the Pacific coast would have added anything to our national wealth, or prosperity; and the benefits to be derived from the extension of civilization around the earth, would have been delayed to an indefinite period.

One who recognizes the principle, that there is a Providence which directs the destiny of nations, will delight to contemplate the facts connected with the location and discovery of gold in California. If that higher state of civilization, which is based on the christian religion, is ever to prevail throughout the earth, it can only be established by increasing the intercourse between its inhabitants. Commerce, of which money is an essential element, is the great agent of civilization; and it may be safely affirmed that, through its means alone, can the many hundred millions of Asia be christianized. Nor does it seem possible that much progress can be made in this great work, until a more direct and speedy communication is opened between the Atlantic and Pacific Oceans; and what other agent so efficient in bringing about this result, as a large deposit of gold near the Pacific coast? When we consider that the existence of this gold has been known for

a century, and that it has remained untouched through all this time, we can scarcely resist the conclusion that it was reserved as the means of opening a communication between the two great oceans, through the heart of the American continent. Should this important work be consummated, we shall then require a large addition to our present stock of the precious metals, to enable us to carry on the immense commerce which will at once be opened between this country and the continent of Asia, Australia, and the rich Islands of the Indian Ocean.

With so many objects demanding an augmentation in the quantity of the precious metals, we conclude there is no just reason for supposing that any material depression will take place in their value, even if the quantity of gold in California should be equal to the most extravagant accounts. And hence we regard these mines as an important element of national wealth, and of national greatness; calculated to quicken the development of the vast resources of this country; to enlarge our intercourse with all the nations of the earth, and advance the cause of civilization throughout the world.

ART. II.—COMMERCE OF THE EAST—NO. V.

ADVANTAGES OF A RAILWAY.

BY J. LOUGHBOROUGH, ESQ.

Objection as to snows answered—Direct benefits of a Railway—1. The employment it will give—2. Increase of commercial facilities—3. Value of lands—4. Repairs, &c.—5. Increase of interior trade—6. Increase of civilization—7. New lands made productive—8. Diversity of pursuits and products—9. Bind us to California—10. Bring out minerals of the mountains—11. Pastoral regions—12. Saving in ships—13. Amounts paid by whaling ships—14. Outlet for the valley of the Mississippi—15. Description of all the countries of Eastern Asia—16. This road will give impulse to others——Historical account of a canal across Egypt, and modern projects of Mohammed Ali—Invasion of it by Napoleon—Description of route to India now in use through Egypt—Some account of the currents, trade-winds, and monsoons of the Indian Seas—Canal across the Isthmus of Tehuantepec—Comparison of advantages of the routes through Egypt, through the Isthmus, and across our continent—Political errors—Moral effects of opening a new route to China.

BEFORE proceeding to sum up the advantages of a railway to the Pacific, it is necessary to advert to an objection which has been urged seriously, as respects the practicability of the work. The objection is, that it would be, for a great part of the year, rendered useless by the snows. As this objection was once suggested to the writer by an intelligent member of Congress, it deserves consideration. The following is the result of numerous enquiries, addressed to able engineers:

If a railway be covered by *wet* snow, some inches deep, there is some danger that the passage of cars over it will press it into a sheet of ice; and, when this is the case, there is not sufficient friction to

enable the cars to move forward. The wheels revolve rapidly, but no progress is made. Again, in deep cuts, if large masses of *wet* snow are drifted in upon the rails, the impediment is nearly equal to a bank of ice. On the contrary, *dry* snow constitutes no impediment at all. If *thin*, it does not hurt; and, if fifty feet deep, a car will plunge through it as easily as through a fog bank. A *wet* snow is very rare on the western border of Missouri, and a few miles west of it *never* occurs. But, why may not a railway be elevated a couple of feet? This would avoid the whole difficulty with entire certainty.

The benefits to be anticipated from the construction of this great work, are—

1. The employment it will afford to large numbers of individuals, who are now profitlessly engaged in pursuits which are not sufficiently diversified to be productive. There are thousands of able bodies and willing minds now in this Union, to say nothing of the thousands which Europe is anually pouring upon our shores.

2. By increasing the facilities for getting to a market, the capital and labor now unproductively employed in seeking one, would be applied to the production of wealth. This would enable the farmer to multiply his products; and this multiplication would again enable the manufacturer to set more machinery to work, and give more employment to labor, and the final result would be a larger surplus to sell or exchange with foreign nations.

3. The value of the lands in the vicinity of such a road would be instantly quadrupled, because the facilities for getting to a market would render the products of agriculture more valuable.

4. The construction, care, and repair of the railway, will require a permanent force of able bodied men; and these men will require a large amount of agricultural and manufactured articles.

5. It will treble the interior trade of the Union, by giving a new impulse to industry, and rendering it profitable to exchange many articles of consumption, which cannot now be profitably exchanged, in consequence of the deficiency of facilities.

6. A broad belt of civilization will span the continent, diffusing its invigorating and wholesome principles, and habits, through regions which otherwise must remain savage and desolate for ages to come.

7. Thousands of square miles of land will find a profitable market, and be made to yield the elements of comfort and happiness, which otherwise must forever remain uninhabited and unproductive.

8. It will diversify the pursuits of our people, and thus save large amounts which now seek a foreign market; and, by introducing a greater variety into the agricultural products of the country, exchanges will be multiplied.

9. It will bind us, as with a band of iron, to our colonies on the shores of the Pacific. The great mountain barriers which it was once thought nature herself had erected to separate nations from each other, will no longer present an impediment to political and social unity; and we will secure, free of duty, an interior commerce more widely extended, more diversified, and more productive than the world has yet witnessed. The thronging millions who are destined to fringe the Pacific, instead of growing up into power and splendor, as aliens to

our institutions, laws, and principles, and rivals and enemies in trade, will be united to us by common sympathies, opinions, habits, laws and constitutions. Civil and religious liberty, the life-spring of all our prosperity, will diffuse their invigorating influences from the Atlantic to the Pacific, and thus give to the whole continent one motive power.

10. Within the recesses of the great mountain chains which stretch for hundreds of miles west of the south pass, are embosomed numerous and rich mines of the precious and useful metals. These mines can never be worked to advantage, or their wealth brought out and diffused, without a railway.

11. West of the States there is the finest pastoral region in the world—and the like is true as respects the valleys of the Rocky Mountains; and the water power and coal in upper Oregon and California, are exhaustless. Here, then, the raw material and the manufacturing power lie side by side; but these will remain utterly wasted and unproductive without a railway.

12. Should this road be constructed, a large amount would be annually saved in consequence of the trade crossing the continent, instead of rounding Cape Horn, a dangerous Cape, where many losses have already occurred.

13. There are now annually employed in the Pacific three hundred whaling vessels. They are compelled to re-cooper once or twice a year. Heretofore and now they seek the ports of South America and the Sandwich Islands to do so. The average expenditure of these vessels is one and a half millions. Complete this road and these vessels will resort to San Francisco, because they would there be in direct communication with owners and friends; they would be free from lawless seizures and port charges, and they would, above all, be in the waters of the Union, and under the protection of its glorious flag.

14. Once finish this great work, and we shall have a market which can *never fail* for *all* our surplus products of every kind. Whenever the equilibrium of trade should be disturbed by European wars, or domestic accidents, or providential inflictions, and thus a surplus should be collected in any branch of industry, which could find no home or European markets, this will prove a certain, and safe, and profitable outlet. How much will be thus saved from perishing? and how much will the law of demand and supply, and other conditions of trade, be steadied? In truth, a market which may at *all* times be resorted to, without danger of glutting, will operate like a balance wheel upon the whole commercial system of the country, and relieve us from all those sudden changes, and perpetual and unanticipated fluctuations and revulsions, which have hitherto rendered all commerce a species of gaming, and been the prime cause of all the depravity of principles with which we are afflicted in the common affairs of life.

It will make this basin of the Mississippi the centre of the world's civilization; the home of plenty, the seat of science and the arts, and we shall hold at the same time the sceptre of power. With the finest climate on the globe—healthful and salubrious—mineral resources exhaustless, and soil which, with moderate culture, will teem with all the necessaries and comforts of life, we need only the stimulus of a *demand* to bring into existence all the elements of wealth and splendor.

The construction of this road will create that demand. It is sometimes supposed that the expense of transportation across the continent and the Pacific would be so great, that the new route to China could not be made to rival that at present in use. This is a mistake. For ships freight is estimated by a measurement of forty feet to the ton, and for railroads by weight. Young Hyson teas (the heaviest description, compared in weight and bulk with flour,) require two tons measurement to one ton weight, and $7 per ton measurement from China to Oregon would be a large freight, compared with the present rate from here to Europe; and, at one cent per ton, per mile, weight, (an amount of toll sufficient to keep the road in repair, and yield dividends,) the cost to St. Louis would be $10—whole cost from China, for a ton weight, $24. But there is no need of this road being made to yield a dividend. It should, on the contrary, be only productive enough in tolls to keep it in repair; and a half cent per mile per ton would be ample for this purpose. This would make the cost of a ton weight of tea, from China to St. Louis, $19.

Again, corn can be taken from St. Louis to the Pacific at 25 cents per bushel, and for 15 cents more to China—whole cost 40 cents—and it will be worth there 75 cents per bushel. Wheat can be taken from St. Louis to the Pacific for $1 per barrel, and 50 cents more to China, and will be worth there $10 to $15. These articles cannot now be taken to the east with profit, because of bulk and weight, and the sea voyage through the tropics; and their transportation can be performed, *by sail vessels*, in less than half the time now consumed from Canton to London. But, if steamers are placed on the line from Francisco to China, the trip may be made from London in forty days, from New York in twenty-eight days, and from St. Louis in twenty-five days. We have no other articles heavier, in proportion to size and cost, than corn and wheat; and, if this outlet for the products of industry shall be created, who will undertake to calculate the limits of our productive energies? But, with all that science, skill, industry and numbers can accomplish, we shall be still unable to *supply* the new *demand*. For,

15. Of the eight hundred millions of people who inhabit the earth, six hundred are in the islands and upon the coasts of the Pacific Ocean. These six hundred millions have been in the rear of the Europeans. They are very poor navigators, and they would be glad to give up to us the whole carrying trade of the Pacific. Their ancient habits will be broken—the spell of ages will be removed—and, stimulated by commerce, they will awaken to a new life, and manifest new tendencies. These people are now subsisted, for the most part, upon rice and pulse. We will take to them meat and bread, and metalic implements, and they will eagerly grasp the proffered benefit. Look upon the map, and behold the length and breadth of the lands which this road will open to American trade.

The Russian possessions, north of us, are not inconsiderable. They now need supplies of meat and bread, for which they are able to give furs; and these furs are equal to cash in Asia.

Manchuria, or Manchoo Tartary, is the northern division of the Chinese Empire. The Sea of Okhotsk is its outlet. Into this sea empties the river Saghalin, in latitude 53 deg., and east longitude 141

deg. north of the Island of Japan. This river is one of the largest in the world, and is navigable for an immense distance. Rising in Mongolia, it winds through a part of Russia, and drains in its course near 900,000 square miles. It is the only outlet for this vast region. The population of this region is unknown. Those of the northern portion are nomadic, but the southern are agricultural. Who can estimate the value of trade here?

The Islands of Japan, extending from latitude 50 deg. to 30 deg., and in longitude 128 deg. to 150 deg., come next. The population of these Islands are estimated at 50,000,000, at the lowest. They are, at present, even more jealous of foreigners than the Chinese; but necessity will soon open their ports. They are industrious and skilful. Silks, teas, and a variety of manufactures are produced by them. They possess large mineral resources, especially of copper.

Next in order is the broad empire of China, between 20 and 60 degrees of north latitude, and 70 and 140 degrees of east longitude from Greenwich. The population was estimated in 1813 at 367,000,000 by official reports, and other accounts say more. The provinces of this great empire are, 1st: Pe-chi-li, of which Pekin is the capital. The population is 16,702,763, and that of Pekin from one to three millions. Its area is 58,949 square miles. This province is nearly a sandy desert. Mr. Gutzlaff says, "as the country here yields very few productions, and Pekin consumes immense quantities of stores, the imports are very large." 2. The Shan Tung province, south and east of the first. Its area is 56,800 square miles, and its population 28,968,-760. The two emporia are Ting-choo-foo and Kan-choo-foo. The Grand Canal runs through a part of this province. The capital is Te-nan-foo. The coal mines of this province supply the empire. 3. The provinces of Keang-soo and Gan-hwuy lie on the south of the last, area 81,500 square miles; population 72,011,500. These are the most fertile and populous provinces of China. In this district is Nan-kin, the great city of Loo-choo, and other large towns. The inhabitants are rich, cultivated, ingenious and industrious. Here are the finest silk manufactories. The Yang-tse-Keang, a large river, flows through this district. There are also some other navigable streams, and the Grand Canal passes through its entire length. It is the commercial centre of China. At the mouth of the great river is the city of Changhae, the western terminus of our proposed line of steamers. 4. Honan lies west of the last mentioned. Its area is 6,200 square miles, and population 23,037,171. It is said this was the first tract of land inhabited by the Chinese. The capital is Kai-fung-foo, a large city. The mighty river Hoangho flows through the entire province, and is navigable the whole distance. 5. Next is Chi-Kiang, emphatically called the land of silks and teas. Its area is 57,200 square miles, and population 26,256,784. These are the most polished people of the empire. The Island of Chusan is on its coast. Ning-po, the port for foreigners, is opposite Chusan, and has an excellent harbor. Hang-choo, its capital, ranks only second to Pekin. This province is the great tea producing and silk manufacturing district. The Grand Canal passes through it. 6. The province of Fuh-Keen is on the south of the last. Its area is 57,150 square miles and its population

14,777,410. Formosa is in front of this province. The southern portion is barren; the northern fertile in grain and teas. Here the black tea is mostly produced. It has a number of fine harbors through which there is an active trade. Among the principal of these, open to foreign trade, is the residence of many rich merchants. Three hundred large junks belong to this port. Foo-chow-foo, the capital, is situated on the river Min, which is navigable for large ships within ten miles of the city. The Island of Formosa is very fertile, producing sugar, rice, camphor, &c. It also has rich beds of coal. 7. The Kiang-si is directly west of the two last provinces; its area is 27,000 square miles and population 30,427,000; it is amazingly fertile, and has some large cities. The great Yang-tse-Keang crosses its northern border, and one of its branches runs through the whole length of the province. 8. Directly west of the last are Hou-quang-now, Hoo-pi, and Hoonan, with an area of 168,300 square miles, and a population of 36,022,605. It is said to be fertile and to have some large cities. The Yang-tse-Keang flows entirely through. 9. South of the Melin mountains we come to the province of Quang-tong, fronting the China Sea; its area is 97,100 square miles, and population 19,170,000. Its principal city is Canton, which, until 1842, was the only port open to foreigners. Its population is one million. It is about seventy-five miles inland on the Choo-Keang river. M'Clelland says of Canton before 1842, "The great mass of the foreign commerce (estimated at $80,000,000 per annum,) is carried on by the English and Americans." 10. Kwang-si is situated directly west of the last and communicates with Canton by a large navigable river. Its area is 87,800 square miles and population 7,313,895, Its produces abundance of grain and has rich beds of ore.

The foregoing are only the provinces directly on the coast, or which are connected with it by rivers of size.

The aggregate population of these provinces is 274,667,977. The interior provinces trade freely with these. Some of the rivers of China even rival the Missouri. Such are the Saghalin, Pi-ho, Whoang-ho, &c. The Yang-tse-Keang (Son of the Sea,) takes its rise in the Pe-hing Mountains, in Thibet. After a long and tortuous course, it enters the Chinese Empire, winds through the richest portion of the country, and the most numerous population on the globe; and, after crossing the whole Empire, and watering by its branches an immense and fertile region, enters the Ocean in north latitude 31 deg., just in front of the great city of Changhae. It is 4,000 miles long, and navigable to Thibet.

The population here given, is taken from the imperial census of some years back. According to the best and most recent estimates, it now exceeds 450,000,000. The people of China are a sober, industrious, and pains-taking people. In some branches of manufacture they rival, and in others surpass, all other people. In teas, they have no rival; plain silks they can make cheaper than any other nation. They have an abundance of raw silk for export. Some of their goods are richer than similar fabrics of other countries. They produce drugs, oamphor, rhubarb, and other medicaments for all the world; and they can produce a supply of sugar for the whole world. They use but little machinery, the population being dense and labor cheap. We can

multiply their productive power by introducing improvements. They import manufactured cotton, woolen goods, and metalic implements from England. From Bombay, Calcutta, &c., they import 400,000 bales of cotton, and $20,000,000 worth of opium. They also import a variety of articles from the neighboring seas and islands. They need our flour, maize, meats, and all our productions fit for food. These articles cannot now be taken to them; but create this railway, and it will be done at once. But, this road will create other productive sources of trade.

The Sandwich Islands, situated in north latitude 20 deg., and west longitude 156 deg., are distant from Francisco 2,160 miles. The population is 108,000. Their present imports are $475,000, and exports $460,000. They are fertile, and produce sugar of fine quality. They have become almost civilized. In 1831, they owned 14 vessels, of 2,630 tons aggregate.

The Polynesian Islands have a population of 1,500,000. They are fertile, and produce a great variety of articles. Their inhabitants are naked and barbarous; but, like the Sandwich Islanders, commerce will civilize them.

The Island of New Guinea, in south latitude 9 deg., and longitude from 120 deg. to 150 deg., has an area of 305,540 square miles. The inhabitants are agricultural, and anxious for trade.

Australia, in 10 deg. south latitude, and from 113 deg. to 153 deg. east longitude, is in length 1,750 miles. Its coast line is 7,750 miles. It has an area of 3,000,000 square miles, and a colonial population of 160,000, and a native one of 63,000. With the adjoining islands, there is an aggregate of 1,000,000 souls. It is distant from Francisco 6,000 miles. Coal is abundant on this little continent, and near the surface.

In latitude 2 deg. to 6 deg. north, and longitude 109 deg. west, is the Island of Celebes, less than 6,000 miles from Francisco Bay. It has an area of 75,000 square miles, and a population of near 3,000,000. This is a Dutch possession.

Java, in latitude 6 deg. to 9 deg., and longitude 105 deg. to 115 deg., is 600 miles in length, and from 40 to 130 miles broad. Area, 45,700 square miles. Population near 6,000,000. This is another Dutch possession, and rich in tropical products—coffee, sugar, indigo, &c.—of the annual value of $30,000,000. It is distant from Francisco Bay 6,920 miles.

Sumatra, directly upon the equator, is 1,050 miles long, with an area of 122,000 square miles, and a population of 2,000,000. Rich in aromatics and spices; 30,000,000 pounds of pepper is annually produced. Distant from Francisco Bay about 6,900 miles.

Borneo, upon the equator, in longitude 119 deg. east, is 750 miles long, and 350 miles broad, has an area of 260,000 square miles, and a population of 4,000,000—150,000 of whom are Chinese. Here all the productions of the tropics abound. It also has minerals—some gold, antimony, tin, and diamonds. The harbors are good. Distant from Francisco Bay about 7,000 miles. The gold mines of Sambas, Capt. Brooke says, yield $2,600,000 per annum. The inhabitants are honest, industrious, and thriving. It can be made to yield $150,000,000 worth per annum, for export.

The Phillipine Islands, rendered immortal by its famous Governor, the uncle of Camilla, who duped Gil Blas, are situated in latitude 5 deg. to 20 deg. north, and longitude 117 deg. to 120 deg. west. They have an area of 134,000 square miles, and a population of 3,500,000. They produce sugar, coffee, indigo, hemp, &c. Distant from Francisco Bay 6,340 miles.

The Island of Singapore, situated at the extremity of the Malay peninsula, latitude 1 deg. north, and longitude 103 deg. east, has a fine, healthy climate, and is so centrally situated that it is believed all the commerce of British India must centre there. Distant from Francisco Bay 7,400 miles. The area of British India is 1,357,000 square miles, according to Waterston, with a population of 184,300,000. The commerce now centres in Calcutta, Bombay, Madras, Ceylon, and Singapore. The aggregate yearly amount of exports is $165,000,000.

In addition to all these places for thriving trade, the whole west coast of America will yield untold millions of profit; and the vigor, courage, activity, and perseverance of our sailors, will discover in the bosom of the ocean itself, rich deposits of wealth in the shape of shells, pearls, &c.

16. The construction of this great central railway across the continent, would make it the interest of all sections of the Union to unite themselves to it by branch lines; and all these improvements would increase many fold the productive capacity of the country, and diffuse a greater variety of the comforts and luxuries of life throughout the United States.

The foregoing considerations, in themselves, furnish overwhelmning evidence of the utility of this great work; but, in addition to them, a large number of intelligent persons, among whom are Mr. Whitney, Senator Breese, and other distinguished citizens, are impressed with the conviction that the commerce of Europe with China and eastern Asia, would be diverted from its present channel, across our continent. These gentlemen have estimated that the value of the vessels of Europe and America, now engaged in the trade beyond the Cape of Good Hope, is about $61,000,000. If this trade is diverted across our continent, one-half the tonnage would be sufficient to carry it on in both oceans, thus making a saving of about $30,500,000. And an additional saving will be made for hands, insurance, wear and tear, interest, &c., of $16,700,000. In addition to these facts, it is urged that the carriage of passengers and mails would yield a revenue of $4,000,000; and, that the tolls payable on this road, for all the goods now carried to Europe around the Cape of Good Hope, would amount to upwards of $20,000,000.

The author of these articles is not prepared to assert positively that the whole commerce of Europe with Asia would necessarily be brought across our continent upon this railway. To come to such a conclusion quite a large number of facts must be taken into consideration, such facts as are difficult of access in America, and which he has seen no attempt to collect on the part of those who urge the argument with the greatest zeal. Let us relieve these dry details for a few moments by a historical reminiscence, and then sum up all the facts in our pos-

session, from which the reader will be left to make his own inferences.

It is well known that there was anciently a canal from the Nile to the Red Sea. The historical facts which have come down to us are as follows:

Herodotus says (B. II,) that a canal was cut from the Nile above the city of Bubestis; that it turned a mountain from the west to the east, and afterwards turned south to the Red Sea. He attributes its commencement to Nechos, the son of Psammetious (616 B. C.) but gives its completion to Darius Hystaspes, (521 B. C.) It was four days navigation and four ships could pass abreast.

Aristottle (Met. B. I, ch. 14,) says a king had attempted to cut a canal from the Red Sea to the Nile, but abandoned the work because the Red Sea was higher than the land of Egypt.

Diodorus Siculus (B. II,) attributes it to Nechos, but says it was completed by Ptolemy Philadelpns, (280 B. C.) when it was named the river of Ptolmeny; but he makes it communicate with the Persian branch of the Nile.

Strabo agrees with Herodotus. He says it was 100 cubits in width, with a depth sufficient to carry large vessels, (B. I and XVII.) He adds that it terminated at the Arabic Gulf, and that in his time the merchants of Alexandria found an outlet from the Nile in the Arabic Gulf to go to India.

Pliny says this canal was begun by Sesostris (970 B. C.) near Bulastis (B. XXXVI. ch. 29,) and went to the Red Sea; that Darius proceeded with it afterwards, and Ptolemy still farther improved it. He says that the latter conducted the canal by the Bitter Fountains, but ceased soon after, having been told that the Red Sea was three cubits higher than the land of Egypt.

The geographer Ptolemy, who lived in the time of Trajan and Hadrian, (B. IV, ch. 5,) calls it Trajan's river.

Omar-abor-el-Hatlab ordered Amron, who had conquered Egypt about the year 635, to open the canal fromthe Nile to Quotzoum on the Red Sea, to convey the contributions in corn to Arabia. Elkinain informs us that it was shut up again by the Caliph Almanzor in the year 773.

From these respectable authorities there is reason to believe that there has at sundry times been a canal open from the river Nile to the Red Sea, at the bottom of the Gulf of Suez; and that there had been the means of using it. Whether ships passed from the canal into the Red Sea, does not appear. There might have been a transhipment and probably was. It is certain that this route was afterwards abandoned, and the commodities of India landed at a place under the tropic called Berenice, (the same mentioned in the first of these essays,) situated about 450 miles south of Suez; whence they were transported across the desert to Coptis, and thence down the Nile to Alexandria.

The invasion of Egypt by Napoleon was undertaken for the purpose of crushing the British power in India, by creating a navy upon the Red Sea—re-opening this ancient canal, and finally uniting the western powers of Asia against the British and invading their possessions overland.

During the life of Mohammed Ali it was contemplated to open the

old canal, but the project was finally abandoned under the apprehension that the winds would drift into it the sands of the desert. Of late years two other projects have been under advisement—the one for a ship canal from Tineh to Suez; the other for a railway from Cairo to Suez. What the probabilities are for the completion of all these works, we have no means of ascertaining. Since the deaths of Mohammed and his son Ali Pacha, it is most probable that Egypt is left without a vigorous head to give impulse to its physical force. Whether there is any prospect of the English taking possession of Egypt, we cannot determine. Our impression is that all Europe would resist the attempt.

In instituting, however, a comparison between the route across our continent from Europe and one through Egypt, it is as well to place it upon the supposition that rather than become tributaries to us, the nations of Europe would enter into treaty stipulations, by which a railway from Cairo, or a canal from Tineh, will be made. Bearing this in mind, we will now sum up the facts.

From London to Alexandria, steamers now make a trip in fifteen days it is said, but this is more than doubtful. From Alexandria to Cairo is 112 miles. This may be made in one day. From Cairo to Suez is 76 miles. By railway, a couple of hours would be sufficient. The Red Sea is 1420 miles in length, but steamers cannot approach Suez nearer than two miles. Here is a transhipment, which may be made in boats of 30 to 60 tons. From the Gulf of Aden to Bombay is 1500 miles; thence to Calcutta is 1050 miles, and from Calcutta to Canton, is not less than 2500 miles. McCulloch, in his dictionary says, that the East India Company make a trip now, with steamers, from England to Bombay, in less than 60 days, touching at Marseilles. These are the distances, the impediments, and the time as given by McCulloch.

Sixty days to one who only looks upon a map or globe, would seem a long time for such a trip; but when the nature of the currents, trade winds, and monsoons of the Indian Ocean, are taken into consideration, we shall find reason to think that McCulloch is nearly correct.

1. There is a constant current moving westward from Bombay to the African coast, and with this current the trade wind, properly so called, generally coincides. A steamer, then, in passing out of the mouth of the Red Sea, would have to strike nearly south by east, several hundred miles, to escape this current and wind. This on the return trip, would be in their favor, but,

2. In the Indian Ocean between Sumatra and the African coast, and from 30 deg. south latitude to the Artic coast, including the Arabian Sea and the Bay of Bengal, the monsoons blow from September to April, north east; but from April to September, they change to the southwest, and move in with the land to the west-southwest. During the northeast monsoon, the wind is most steady. Another of these monsoons is between Madagascar and the coast of Africa, north of the Equator. There, from April to October, the wind blows in a steady breeze S. S. west, and from October to April it resumes the direction of the trade winds, and varies from northeast to E. northeast.

A monsoon of a less strength occurs in the Chinese Seas, extend-

ing from Sumatra to Japan. The winds here are much influenced by the large Islands. Their prevailing direction from October to May, is from north to south, inclining a little west.

The great equatorial currents of the Pacific also, flow westward from America, and strike the coast of China, and flow down that coast to the peninsula of Asia. This constitutes another difficulty in the voyage to Canton.

These facts render it next to certain that Singapore cannot be reached by steamers, by way of Egypt, from London, as soon as that point can be reached by way of our proposed railway, and positively certain that Canton cannot.

From London to New York, the trip may be made in twelve days; from New York to the Bay of Francisco, in seven days, and from that Bay to Changhae, in twenty-two days, allowing full time for coaling at Halifax, along the line of railway, and at the Fox Islands. This will be from London to Changhae in 41 days. The northern Pacific is not disturbed by adverse winds and currents, as the Indian Ocean is, and this will prove a great advantage.

But a railway of such length will involve a much heavier outlay for tollage, than the short line required between Cairo and Suez; and there are many considerations of policy, and much political jealousy mingled up in this question of preference of routes from Europe to India. Upon the whole, the better opinion seems to be, that although commerce with Asia from Europe, and from the continent, might *possibly* be cheaper than through Egypt, and around the Cape, yet the probabilities are against its taking this direction.

But a new question is suggested by recent events. The projected railway across the Isthmus of Panama has already been noticed; but we have not yet noticed the fact that an English company, have a charter from Mexico, for the cutting of a canal through the Isthmus of Tehuantepec. Notice has been given to the public that this company are preparing to commence this great work; but we have seen no statement respecting the size of the contemplated work. From our knowledge of the Isthmus, we should say that such a canal cannot be made of sufficient size to obviate the necessity of transhipment.

The trip from London to China, by the Isthmus of Panama, with a railway and the necessary transhipments, may be made in about sixty-four days. Will the difference in the prices of transhipment and carriage across the Isthmus, overbalance the advantage in time which our proposed railway promises? The writer has no data upon which to make this calculation.

One serious blunder in our foreign policy has been made manifest by these recent events—a blunder which no one seems to have observed at the time it was made. This was the cession of the Island of Vancouver, and the northern portion of Oregon, to Great Britain. This Island is rich in stone coal; and without it, or some other foothold on the western coast, Great Britain could never hope to open steam navigation from the Isthmus to China. In the present state of steam navigation, a steamer cannot carry coal over 3,000 miles, and pay owners. In this respect, there is little hope of much advancement.

Much was said in Congress, whilst the treaty was under discussion, relative to the danger of permitting Great Britain to have a naval

station on the Pacific coast; as if the population of Oregon, of American blood, were likely to be injured by the commercial rivalry or naval valor of that power; but no one had the sagacity to perceive the capital error of leaving in her hands the means of establishing a rival route to India. But all this is of a piece with the notion that England wanted an American road to India, from Hudson's Bay, for any other purpose than fur trading; or that America could carry on an overland trade to China, up and down the Missouri and Columbia, cheaper than upon the present route; or that there was no wisdom in the policy of securing a route across the Isthmus for *steam navigation*, to Oregon and the East; or that the shortest route from the west coast to China, was by way of the Sandwich Islands; and yet, upon all these points, we have seen wise and grave statesmen involving themselves in blunders, and shaping the policy of the country in a manner which would have fixed indelible disgrace upon a congress of Lilliput.

A few words upon the *moral* results of the construction of this great central line of railway, and we shall have finished the subject. The pyramids of Egypt were erected to gratify the false ambition and morbid pride of a few ignorant and besotted despots; and they are reared upon the lives, and cemented by the blood of millions of human beings, who wore out their lives in degrading slavery, and derived no earthly benefits from the works of their hands. Shall it be said that a nation of freemen—a nation whose very organization, as a social body, constitutes them propagandists of republican principles, and guardians of civil and religious liberty—have not the vigor of character requisite to open up a commercial road to eastern Asia, which has slumbered in despotism for thousands of years? Directed by the genius of a single individual, we have seen in modern Europe more than two millions of men devote their lives and time to the foolish and fallacious scheme of destroying human liberty, and founding an universal empire. Shall it be recorded in the page of history that 25,000,000 of individuals, who are blessed with all that a bountiful nature can dispense, enriched by the discoveries of science, and the appliances of art, and whose civil institutions secure all their natural rights, and stimulate the individual vigor and energy of each, cannot accomplish a work which will exercise a greater influence upon the destinies of the human race, than all which has ever been accomplished by all the military heroes since the world began? The great wall of China, 1,500 miles in length, was erected as a barrier against barbarian invasion. Too strong and too happily situated to dread that awful calamity, it is proposed not to set up a barrier, but to open up a road to a semi-civilized people, to infuse among them the knowledge of human rights, and spur them on the path of civilization and duty. Shall it be recorded that we have neither courage, skill, enterprise, or benevolence enough to carry out this holy work? The whole continent of Asia is sunk in the sleep of ages. Despotism has paralyzed its intellectual activity and its moral force. Accomplish this magnificent work, and the beams of science will penetrate its shadowy society; the useful and ornamental arts will transform their domestic and social life, and a knowledge of the inalienable rights of mankind, will re-invigorate their torpid communities. The rewards

of their labor will be trebled by the introduction of machinery and chemical skill; their capacity to exchange with other people will be doubled, and successive ages of contact will transform them into a civilized, law-making, law-abiding, and right-observing people. Commerce is, of itself, a great civilizer; but, in the wake of commerce, religion and morals have always followed. This is the testimony of history, and the dictate of common sense. The benign religion of the cross, and its pure moral precepts, will supersede the errors, the superstitions, and the disgusting and degrading rites of an idol-worship. These are the moral results to be anticipated from the accomplishment of this great work; and are they not worthy of a great nation—a nation of freemen and philanthropists—of religion and of patriotism?

The writer will crave the indulgence of his readers, for the carelessness of style manifested in these articles. They were written under a pressure of business, and a want of time, which precluded attention to mere composition. He believes the facts here collected will prove of value in the consideration of this important subject.

[In the third number of these articles, the author gave some calculations of distances from London to the east, via. the Cape of Good Hope and the Isthmus of Panama. It is due to the reader to say here, that these distances, as given, are erroneous, and to explain how the error occurred, and rectify it. In the portion of the State where he resides, there is not a good globe to be obtained; nor is there any copy of a commercial dictionary, which gives the distances required; and, therefore, he was compelled to take them from the best authority within his reach. This authority was that of a committee of the Senate of the United States, with Mr. Breese as its chairman; and a committee of the House of Representatives, with Mr. Pollock as chairman; and these committees had certainly the facilities of arriving at the truth, if any one in the Union had. The writer is not in the habit of relying upon the dictum of any individual, however distinguished; but, in this instance, he feels assured the reader will excuse him for having been mislead. The truth respecting these distances, is of no great consequence to the course of argumentation in which he was moving; yet, nevertheless, he will here insert them for the gratification of the reader's curiosity, and because he does not choose to remain under the imputation of ignorance a moment longer than he can avoid it.

The following are the distances from New York, and from Liverpool, to the places mentioned, as furnished, we believe, by Lieut. Maury, who is in the best position for ascertaining the truth, to the Hon. T. Butler King. The distances are upon the routes, as sailed; and not from point to point, in a series of right lines:

	From Liverpool.	From N. York.
To Calcutta, via. Cape of Good Hope, -	16,000	17,500
To Calcutta, via. Cape Horn, - - -	21,500	23,000
To Canton, via. Cape Horn, - - -	20,000	21,500
To Canton, via. Cape of Good Hope, - -	18,000	19,500

	From Liverpool.	From N. York.
To Valparaiso, via. Cape Horn, - -	11,400	12,900
To Callao, via. Cape Horn, - - -	12,000	13,500
To Guayaquil, via, Cape Horn, - -	12,800	14,300
To Panama, via. Cape Horn, - - -	14,500	16,000
To San Blas, via. Cape Horn, - -	16,300	17,800
To Mazatlan, via. Cape Horn, - -	16,500	18,000
To San Diego, via. Cape Horn, - - -	17,000	18.500
To San Francisco, via. Cape Horn, - -	17,500	19,000

The distance from Liverpool to Panama is about - -	4,500 miles.
From Panama to Changhae, - - - - - -	8,500 "
From New York to Panama, - - - - -	2,000 "
From New Orleans, or Mobile, to Panama, - -	1,600 "

The following table shews the saving of time from New York by the route via. the Isthmus, as compared with the old routes via. Cape Horn and the Cape of Good Hope, to the places therein named, estimating the distance which a common trading ship will sail per day to be 110 miles, and calculating for the voyage out and home:

	Distance via. Cape of Good Hope.	Length of passage out and home.	Distance via. Cape Horn.	Length of passage out and home.	Distance via. Isthmus of Panama.	Length of passage out and home.	Saving via. Isthmus over route by Cape of G. Hope out and home.	Saving via. Isthmus over the route by Cape Horn, out and home.
	MILES.	DAYS.	MILES.	DAYS.	MILES.	DAYS.	DAYS.	DAYS.
To Calcutta, - - -	17500	318	23000	418	13400	244	74	174
To Canton, - - - - -	19500	354	21500	390	10600	192	163	119
To Changhae, - - -	20000	362	22000	400	10400	188	174	212
To Valparaiso, - - -			12900	234	4800	86		148
To Callao, - - -			13500	244	3500	62		182
To Guayaquil, - - -			14300	260	2800	59		210
To Panama, - - -			16000	290	2000	36		254
To San Blas, - - -			17800	322	3800	68		254
To Mazatlan, - - -			18000	326	4000	79		254
To San Diego, - - -			18500	336	4500	82		254
To San Francisco, -			19000	341	5000	90		254

We do not agree with the Hon. T. B. King in respect to the time in which he calculates that steam vessels can make the trip to China, via. the Isthmus. It will be seen, therefore, that our estimate allows some days more than he does in his recent report. We wish to state what will probably be done, and not what might possibly be done, under circumstances remarkably favorable; for this is a plain, practical, common-sense question, touching our trade to the East.]

ART. III.—EDUCATION.—NO. I.

BY JOSEPH ORMROD, ESQ.

Much has been said and written on the subject of education. It is the frequent theme of declamation with both writers and public speakers, who mostly, however, dwell only upon its advantages in general terms; they but seldom attempt to enlighten us as to what should be its aim, or how we may best conduct it so as to secure the advantages in question.

Correct views regarding these important considerations are by no means generally entertained; on the contrary, indeed, it is rare to meet with an individual in any community who is sufficiently well informed on the subject, while the importance and advantages of education itself, so frequently insisted upon, are admitted almost universally, but whether *felt* or not, is another question. Men will often give an easy assent to propositions concerning which they have never instituted an inquiry, and on which they have scarcely bestowed a thought. The fashion of descanting, however copiously, on the many benefits conferred upon man by letters and education, if attended with suitable illustrations, cannot certainly in itself be objected to; it is well in its way—but what we stand more in need of, is to be told what are the principles which should guide and govern us in conducting the education of our children, and what kind of discipline will be most efficacious in our schools for developing mind in the youth of our country, and inclining them to a virtuous life.

The public mind needs enlightenment on this subject quite as much as on any other, for assuredly there is no other that involves in it considerations more vitally important; nor need we look for much improvement in the modes of instructiou now employed, until this is effected.

It is not enough that we have the wish to educate well. However desirous we may be to discharge our several duties as parents or teachers, very much will depend upon the views we entertain and the principles we adopt for our guidance. For should we in this respect be in error, we shall, with the strictest integrity of purpose, and with all the zeal and watchfulness we can command, not only fall short of the amount of good we had expected to realize, and of which our endeavors, perhaps, have been worthy, but frequently our labors will be worse than useless; they may often times be mischievous instead of beneficial, for, as remarked by a distinguished author, "if you attempt to act upon the mind in a way not adapted to its nature, the least evil you incur is to lose your labor."

Too little has hitherto been done or attempted for disseminating correct views, and for stimulating the public mind into activity; at least this is the case in Missouri if not in the west generally.

The discipline of our schools as generally prevalent throughout the

State, is very defective, and objectionable in many respects. A large share of my attention has been given to this subject for many years past, and I have been strongly impressed with the little efficiency of the means commonly employed for the development of mind in our youth, and the poor results obtained by those means, even with the best efforts that can be made. It is highly desirable that some improvement should be made upon the present system, and that a more perfect and rational plan of instruction should be devised and adopted. The character of the age, and the present free condition of the human mind demands this, and unless we bestir ourselves in the matter, we shall be in danger of becoming a race of men still more hopelessly hard featured and unimpressible—without elevation of thought, without spiritualism or reverence of any kind, and altogether given up to materialism. The time is coming when we shall have to look to our schools alone to bring us any sufficient corrective to the worst tendencies of the age, but they must be very differently constructed before they can be thus relied upon.

But how are we to bestir ourselves and set about effecting the desired improvement?

There is a great want of competent teachers among us, but in this the several communities who are the employers are at fault. But teachers themselves, however well informed in their duties, and however correct may be their views, can effect but little unaided, and without the suffrages of those on whom they depend for countenance and support.

Prejudices are in favor of usage, and the best devised scheme of education attended with novelty, would meet with opposition if attempted to be carried into effect in a community uninstructed in its merits. Before, therefore, any considerable change in our modes of teaching can be brought about, a change must be wrought upon the public mind. The views of the teacher and of the community which employs him should be consentaneous, or, at least, not widely different, before we shall be warranted in looking for any great advance or improvement in our present system.

In the first place then, information on the subject must be more widely disseminated; and before details are attended to, *principles* must be unfolded and explained in a manner intelligible to the many. The different communities must be aroused to a sense of the propriety and importance of a change in our modes of teaching, and be in a condition to decide upon what that change shall be, for it rests with them to begin and perfect the good work; the teachers can only be helps and instruments.

It is for the friends of education everywhere, those of them at least who have it in their power, by any means, to operate upon the public mind, unsparingly to exert themselves in diffusing the necessary information. Let them give their hearts to the cause and their minds to the task—gather light from every source, and scatter it abroad, and something effectual may then be accomplish.

When the people at large become sufficiently imbued with correct notions as to the duties of a teacher and learn to know what are the qualifications he should possess, they will seek for a class of men

of somewhat different pretensions from those now ordinarily employed, and when obtained they will afford them the needful support. They will not then commit the best interests of their children and their hopes of the rising generation to the care of him who will do their work for the lowest compensation—*hire* their teacher on the same principles that they hire a day laborer, requiring of him a day's work for a day's hire, and expecting him to labor at his vocation from sunrise to sunset, a long summer's day. This I have known sometimes to be the case, the parties being regardless or rather ignorant of the many and serious evils which would thus be inflicted upon their children both in mind and body, by subjecting them to a confinement so little suited to their nature.

The monotony of their occupations during long hours of confinement, is wearisome to children and jading to the feelings of the teacher himself. These are results which should be carefully avoided.

The task of communicating knowledge and rightly forming the youthful mind, is one of no little difficulty, and demands from the individual who undertakes it, higher qualifications and more enlarged views than such as often fall to the lot of those ordinarily engaged in that vocation. And before we can pronounce upon the competence of any one fitly to undertake the responsibilities of an instructor of youth, we must enquire into and ascertain the objects which he habitually keeps in view while engaged in discharging the duties of that arduous and delicate task. It is not merely the amount of scholastic or other acquirements in the teacher—his advancement in literary, scientific, or mathematical knowledge—which should be regarded.

These, certainly, to the extent which they are required in any particular institution, are not to be dispensed with, but in this regard alone, the attainments of the teacher are frequently more than sufficient for the wants of the community by whom he is employed, while in other respects he is often lamentably deficient in all that relates to right intellectual and moral training. A comparatively slender amount of academic lore in our elementary schools, will generally suffice, but not so with regard to other knowledge—that of the human mind, and more particularly of the nacent minds of children. The instructor must be familiar with the best modes for exciting the faculties into activity and of thoroughly exercising the understanding; he must make himself acquainted with the means by which he can best succeed in engaging the attention of his pupils; learn how to beget in them a love for their studies and a love and respect for himself, as well as inform himself of the methods by which he is to aim at in bringing their moral natures under proper training and discipline. He must regard his vocation as being that of one who is entrusted with the important charge of directing the minds and morals of the rising generation. He must have correct views in relation to all these duties, and study how he can best acquit himself of the sacred trust.

It behooves him to acquire this species of knowledge above all others, and to ponder well upon the undertaking he has entered upon.

As to the amount of acquirements in the common acceptation of the word, as understood to mean learning or scholarship, I may be permitted to remark that there is in the world much learned ignorance.

Many accomplished scholars are to be met with, who have but a slender amount of knowledge as to what is the nature and constitution of the human mind; who have had no sufficient intercourse with the world, and who are but little informed in what relates to the duties of a teacher, such as I have here regarded and enumerated them. These, with all their erudition, would make but poor teachers of youth; but, happily that class is becoming much fewer in numbers.

In the dull mechanical routine which is often pursued in some of our institutions, even of high note, and such as claim for themselves no ordinary distinction, much is received passively by the mind of the pupil, in a manner, perhaps, to be retained in the memory, but with which thought will have little concern.

That knowledge can only be profitable which results from a roused state of the faculties, and from the efforts made by the understanding to comprehend and thoroughly incorporate it with the thoughts and ordinary associations of the pupil or student. The teacher, therefore, who is familiar with the best means of exciting thought in his pupils, and can most effectually succeed in stimulating the youthful mind to enquiry, whatever may be his pretensions in other respects, is in possession of one of the prime and most material qualifications of the office.

He will best be able to engage and secure the attention of his pupils to their studies, for they will thus become entertained by as well as interested in them, and that only can entertain which can be well understood.

I have already said more on this particular subject than I at present intended, being one which was introduced here only incidentally; since, however, I have gone so much into its details, I shall have the less occasion to return to it hereafter in future numbers of the Journal; in which I expect to continue my strictures on the general subject of education. I will conclude what I have now further to say regarding the qualifications most desirable in our teachers, by adding the following brief summary. Those to whom we confide the instruction of our youth, should be men not only in possession of adequate intellectual acquirements, but of sterling moral worth. They should have right views of our common nature, and be familiar with the constitution of man, physical, intellectual and moral; know what are the capabilities of their pupils, and be discerning in their different mental characteristics. They should, in short, make *man* their peculiar study.

Let it not be said that the standard here proposed is too high for us to reach; we must, at least, aim to establish and realize it to the extent we are able. The qualifications insisted upon are indeed far other than such as are commonly found, or than such as we can reasonably expect from the insufficient interest taken by the people at large in such enquiries, and the small amount of remuneration generally awarded to the teacher for his labors, as well as from the little respect which is often paid to him in that capacity.

The time is yet distant, it is to be feared, when teachers with the qualifications here enumerated, will be generally found or even sought for by such means alone as will attract them to employ their talents in that line. The occupation of a teacher should, indeed, be raised

to the rank of a *profession*, in no wise inferior to that of law or physic. We should have Normal schools, in which young men should be trained and prepared for teachers, and not be permitted to take rank as such, until they become thoroughly qualified. In the meanwhile, until such is the case, we must seek in every way to elevate the profession of a teacher as at present constituted, so as to create a demand for that class of men who are alone competent to discharge its multiplied and arduous duties, and with the demand, the supply, to some extent at least, will assuredly come.

Having ended my remarks in relation to our *living* teachers, I will take occasion to say a word or two by way of stricture, in regard to the *mute* teachers—our school books—those of them, at least, denominated Readers. While there has been a gratifying improvement made in most other school books within the last twenty or thirty years, those compilations above mentioned, have, in my opinion, deteriorated and, when considered in their adaptation to the wants and uses of children and youth, are inferior to those which were in use forty years ago. There has been a great multiplicity of those reading books published of late years, class upon class, first, second, third, &c., a wearisome and interminable series of productions, the extracts in which, unceasingly repeated, tend only to weaken the energies of the mind.

It has become the fashion to surcharge the books which are got up for the use of children, with didactic matter, such as but few adults can take an interest in, or read with any profit, and which is altogether unsuited to the minds of the very young, for they cannot possibly understand the force and meaning of the sentiments or moral precepts which it contains, and which are undoubtedly intended for their benefit.

This feature in our school books I look upon as a grave defect, and the compilers who so injudiciously make those selections, are men not fitted for the task; they certainly betray an ignorance of the true nature of the child, but little creditable to their discernment. Instruction in reading, when properly conducted, and when the reading books employed are such as to be suited to the tastes and capacities of children, is one of the best mental exercises that can be resorted to—this presumes, however, that the teacher will make his pupils thoroughly acquainted with the ideas intended to be conveyed by the words, and explain to them every allusion.

But the constant recurrence of moral precepts, however excellent in themselves, is only calculated to weary the mind of the child and give him a distaste to his lesson.

The child is influenced by example and imitation, but never impressed by precept, and this is in a great degree the case with those advancing to puberty. The faculties concerned with reason—with sentiment or precept—are the last to be developed, and those faculties, as existing in children, should not, therefore, be tasked too severely, since it is all important that the exercises of the pupil should be made as agreeable and interesting to him as possible. Those faculties can be sufficiently exercised indirectly, and chiefly by an appeal to them through the imagination, by means of narrative, and compositions containing sprightly images, whether derived from facts or fiction.

The old nursery tales, indeed, of "The Babes in the Wood," "Little Red Riding Hood," &c., &c., are preferable to many books which are now-a-days put into the hands of children, avowedly for their instruction, but which in reality are calcalated, for the most part, to produce an effect directly the contrary.

I will not here undertake to point out other defects in the prevailing system of education, many of which present themselves to my mind, but reserve what I have further to say in regard to them for future occasions when it can be more appropriately introduced, and when I can do a fuller justice to the subject by discussing it more at large. I propose by permission of my good friends the Editors, to give to the public through the medium of the "WESTERN JOURNAL" a series of papers containing my views on the subject of education generally, and the present article may be regarded as introductory to those which are to follow, and which I have now in the course of preparation.

I have no new theory or system to advance in regard to education, nor can I make any pretensions to originality in anything which I shall offer, any farther than what the form and manner of it may entitle me to claim. It is my purpose merely to discuss the subject rather by way of enquiry as to what better system can be devised than the one now prevalent. I shall, indeed, give my own views, and explain and illustrate that species of discipline which I conceive will prove most effectual for developing mind and morals in the school rooms, but shall regard principles rather than details. My principal object will be to call attention to the subject, and excite to enquiry, so as to arouse, if possible, the public mind to its importance, that all who are desirous of seeing education advance, may become aware of the necessity there is that they should up and be doing.

Yet I know but too well how powerless are words, written or spoken, upon the minds of the great majority of mankind for effecting a change of conduct, or of views and opinions, even when they proceed from the most gifted of their species. And men will assent to the truth and correctness of many things which they cannot be prevailed on to carry out in practice; they are too indolent, and it is irksome in the extreme to act contrary to their wont—to lay aside old habits and feelings and assume new ones. Reason and argument, therefore, with representations even of whatever good is to result to themselves from any change of conduct, are of small efficacy where habit is concerned and has to be combatted.

But yet there are a few, always on whom our hopes are based, and on whom the desired impression can be made, if the writer or speaker is but earnest enough and will persevere.

I shall therefore persist in urging upon the readers of the Journal to bestir themselves in the cause of education which is the cause of the well-being and happiness of the human race.

I will now only add in conclusion that what I shall advance in future Nos. will not be my own views and sentiments merely, but such as are entertained by and have the sanction of the best authorities, and the most competent judges in every country where the science of education has received the greatest share of attention and made the greatest progress. And the real progress which it has made has been

made under the eye of philosophy by those who have made the nature of man their especial study, while they were guided by the lights of experience.

NO. II.

Before I discuss the manner in which education should be conducted, or say any thing in relation to school discipline, it will be expedient for me, as conducive to a better understanding of what is to follow, to examine and discuss the question, *what is education?* For it has been said that to find our way, before all things it is necessary to know where we wish to go.

I propose in the course of the strictures which I have undertaken to give, to regard the term in its most comprehensive meaning, and most extended application, that in seeking to realize its full benefits, we may be aware of all the objects it behooves us to keep constantly in view. We are not then to regard mere literary acquirements and the intellectual discipline to which we have been subjected in schools, as the sum total of education, but should comprise in it all that is concerned in forming our entire habits of thought and conduct. We should regard it as being that which should commence with our being, and end only with our lives; for while we live, our minds, like the matter which surrounds us, are continually undergoing change.

They never cease to be influenced by the circumstances around us, by the events of our lives, the examples before us, and especially by the difficulties of all kinds which we encounter.

Education then is not according to the popular notion, a something which should commence at a certain age, and end at a certain period, but be continued through life, and from early infancy. In the endeavor rightly to conduct it, we must concern ourselves with the whole man, his physical, intellectual and moral natures. Our efforts should be so directed, therefore, as to procure for these several powers a simultaneous exercise, that they may be developed in perfect harmony with each other. By this means alone can we hope to secure to the individual who is the subject of our training, the greatest amount of happiness which his nature and his situation in life will permit him to enjoy. By this only will he become capable of attaining to any high standard of excellence which may qualify him for dispensing to his species the greatest amount of good. It is necessary, therefore, that the instructor and all others who have the education of youth under their care and superintendence, should be acquainted with the natural laws, not only those which enjoin air, exercise, cleanliness, temperance, &c., which are the conditions of health, and necessary for producing a suitable exhileration of the animal spirits, but the laws of mind also, which regulate our moral nature. Without this species of knowledge, to some extent, no teacher of youth, or others concerned, can be expected adequately to discharge the duties of his responsible station.

Fortunately it is a kind of knowledge not difficult of acquirement, but such as any one may obtain a competent share of, who is desirous

of so doing. If he will only read Combe on the "Constitution of Man," and make himself familiar with the doctrines contained in it, he will not be ill prepared for his duties.

Sana mens in corpore sano, (a sound mind in a sound body,) is a maxim that was current among the ancients, and implies some knowledge of the principles here adverted to, as existing among the people of high antiquity, two thousand years ago.

The mind and the body sympathise with one another; and that the former should be alert, and in a condition to exert its powers, it is necessary that the latter should be preserved in health and vigor by an observance of the physical laws which nature herself sufficiently indicates.

When those laws are disregarded or unknown, which is but too often the case, as well by the parent and teacher as by the too ardent student himself, disease and not seldom premature death have been the penalties exacted by nature, for her violated rights. But whether these fatal results ensue or not, the tendency of a neglect of this nature is certain. Languor of mind will accompany lassitude of body, and the student will often make unavailing efforts at intellectual labor, which he will at all times but ill accomplish. Bodily and mental exercise, therefore, should be frequently alternated, or the mind cannot possibly be in the most fitting state to receive intellectual culture.

Let those then—few though there be—who having a thirst for knowledge, have yet to labor for the perishable things of this life, and lament that they have it not in their power to devote more time to their studies, be consoled.

They are more fortunately situated than many others who have their entire time at their disposal, but who have jeopardised health and life, and most certainly curtailed existence, by neglecting in their zeal for study, to take that exercise which is necessary, and without which, neither body nor mind can long be preserved in a sound condition. Those who are occupied through the day in attending to the active requirements of their callings, will have ample leisure of thought to reflect upon what they have read in the intervals. Their labor will be no material hindrance to thought and reflection; and when their day's labor is over, they will return to their books and their studies with a keener relish, and be saved all the tedium and listlessness which so frequently pursue the professional student into his seclusion, and sometimes render abortive all his efforts at any effective application.

In making the above observations, I speak advisedly, having from experieuce in the course of my own active life, had occasion to remark how very much the disadvantages, as regards the popular objection, "want of time," for acquiriug knowledge, have been exaggerated, and made the *plea* for ignorance.

Work, which to many conveys the idea of something to be endured that is painful or degrading, and therefore to be deprecated, should to a certain extent, be regarded as a necessary part of the education of every youth who is to be fitted for all the duties of life. If generally so regarded, and constituted as part of the discipline of every institution, it would undoubtedly be found highly beneficial, not only in a

physical and intellectual, but a moral point of view also. If I am correct in these sentiments, it becomes a question how far those institutions called manual labor schools, when under suitable regulations, will answer the purpose in view. The results on record of schools organized on this plan, which have been properly conducted, and on enlightened principles, are highly satisfactory and favorable to a repetition of the experiment, particularly the one at Hoffwel in Switzerland, conducted by Fellenberg and others, if I am not mistaken in names and localities, for I write solely from recollection.

The above remarks contain all that need be said on the subject of our physical nature; I will next make a few observations in relation to the moral powers as equally, or still more imperiously demanding our attention in the training or education of youth.

It is necessary for me to do this here, in order to complete the view I am now taking of education as a whole, although I shall hereafter have occasion to treat the subject more at large.

In like manner as the mind and faculties will not act freely only when the physical powers are adequately and simultaneously developed, neither will it act beneficially unless at the same time the moral powers receive their due share of cultivation. Moral training, therefore, should invariably accompany the stimulus of intellectual culture; for unless the youth becomes better as he becomes wiser, his capacity for mischief will but be increased, and that in the same proportion as his mind gains vigor and expansion. Intellectual should always, indeed, be held subject to moral culture. The former is only worthy of being considered of importance as administering to the latter; for the true object of a good education is the well-being of the pupil, in the right formation of his character. When undertaken without this object in view, the results are exceedingly doubtful.

When the moral does not receive equal cultivation with the intellectual nature of man, these two powers are apt to be like two ill matched horses, often drawing in different directions. When the education of an individual has been conducted with entire neglect of his morals, it is more likely to prove a curse than a blessing to him, and he will be apt to become a bane to society; for in this case also, equally as when the physical powers have been neglected, it will be found that nature is not to be defrauded of her dues with impunity, but will avenge her own wrongs in a manner no less signal than in the former case.

The derangements which thus take place, are not the derangements of nature, but produced by man when he refuses conformity to her appointed order; throughout her wide domain everything is established upon the principles of harmony and concord.

Far better would it be for the individual thus circumstanced, and for the community of which he is a member, had he been left altogether in literary ignorance and with faculties unexercised in knowledge; for when thus under no moral restraints, those faculties will certainly be employed in the pursuit of unworthy objects,—in corrupting society, perhaps, and working out evil and not good.

We are so constituted as to be dependent for our well-being upon intellectual and moral advancement, and if we would advance in the

right direction we must study and observe nature—live in obedience to her laws, and regulate our minds according to her dictates.

If we remain ignorant or regardless of her manifest injunctions, we inevitably suffer in mind or in body, for to every infraction of the natural law there is attached a penalty which we have not the power to evade,—a physical one, if the infraction be physical, a mental one if it be mental.

"When our bodies are diseased we feel pain. When our taste is offended we experience disgust. When our moral nature is violated we are conscious of wretchedness. When it is in health, we enjoy a kind of moral gladness, which is nearly if not quite synonymous with self-approbation. Hence from a retrospective view of our conduct, and the sensations we have thus experienced, we derive laws for our future guidance.

When the moral can be brought to act in concert with the intellectual powers there is little danger of unduly exciting the faculties, unless in the case of young children. They will at least not fail to be employed beneficially when thus under the supremacy of the moral sentiments. Their exercise will not only conduce to the happiness of the individual himself, but be employed in promoting the well-being of all who come within the sphere of his influence. And this will be more and more the case as he advances in knowledge and gains comprehensiveness of thought, for he will come to see still more clearly that it is his highest interest to do good and live a purely virtuous life. Intellectual culture, indeed, is of itself favorable to virtue, for it increases the discernment of him who has it and enables him the better to appreciate the consequences of his own conduct. An intelligent community is generally a virtuous community.

Before entering upon any of the details which relate to school discipline, and that the view I am now taking of education in its several parts, may be as complete as the limits to which I am restricted will admit of, I will extend my observations. and make some remarks concerning the true objects we should aim at in giving a literary education at all to our children.

The grand object of education, as admitted by all, is to promote our happiness by enlarging our capacities for enjoyment. The opinion is too prevalent that the possession of worldly good alone—of wealth, and of social and political distinctions—will effect this. The sole aim, therefore, of a great majority of mankind, in the education which they provide for their children, is to qualify them for the business of life, that they may adroitly acquit themselves in the station which they are destined to occupy and be enabled to make the most of the advantages it is capable of affording. This is a great and fatal mistake. They trust to externals for that which it is not in the nature of externals to give. To a certain extent, indeed, they are necessary to our comfort and well-being; but, beyond that, they conduce nothing to our happiness, but more frequently bring with them increased care and discontent.

It is not the gross objects of sense, nor yet any high honors and distinctions, such as are conferred by man, that can permanently satisfy an immortal mind—a being, whose inmost cravings are for something spiritual or intellectual, and such as can never be assauged by anything of a worldly nature.

In a state of simplicity, and before their feelings have become perverted and vitiated by society—such society as is two generally found —human beings possess a taste for all that is good and beautiful, and are capable of higher and more refined enjoyments than any which have their source in material things.

But if not taught early to find pleasure in the energies of thought, in noble and virtuous actions, in refined conversation, in arts and literature, they will be prone to a mischievous activity in trifles, and seek for gratification the indulgence of their lowest propensities. Without intellectual culture, they will only be excited to action by the selfish aims and narrow views of the world around them, and become intent upon mean and unworthy objects. To guard against these consequences, which are incident to an uncultivated mind, should be one of the chief objects of education. In a good education, therefore, something more is comprised than what is usually called useful knowledge, or what may be conceived necessary for affording men the facilities for supplying their more material wants in life; and if we would secure the best results which such an education is capable of affording, we must look beyond the mere advantages, however great in a worldly point of view, which any literary or other acquirements can confer. When education is conducted without any heed to this essential consideration, it may be regarded as a mere *apprenticeship*, undertaken to fit the student for the business of life.

The expression, apprenticeship, as applied here, is borrowed from a book which has many attractive qualities, but which has received less attention than it is entitled to claim; this is "*Biographia Borealis*," by Hartley Coleridge. There is in it a passage so much to my present purpose, that I will here extract it:

"The position is simply this: *A mere apprenticeship is not a good education.*

"Whatever system of tuition is solely adapted to enable the pupil to play a certain part in the world's drama, whether for his own earthly advantage, or for that of any other man or community of men, is al- mere apprenticeship.

"It matters not whether that part be high or low—the hero or the fool. *A good education*, on the other hand, looks primarily to the right formation of the man in man, and its final cause is the well-being of the pupil, as he is a moral, responsible, or immortal being.

"But because to every man there is appointed a certain ministry and service, a path prescribed to duty, a work to perform, and a race to run, an office in the economy of Providence,—a good education is always a good apprenticeship; for usefulness is a necessary property of goodness.

"The moral culture of man, and so much of intellectual culture as is conducive thereto, is essential to education. Whatever of intellectual culture is beyond this, should be regarded as pertaining to apprenticeship, and should be apportioned to the demands of the vocation for which that apprenticeship is designed to qualify. A man whose education is without apprenticeship, will be useless; a man whose education is all apprenticeship will be bad, and therefore pernicious in proportion as his function is high, noble, or influential.

"Most of the systems of tuition provided for the subordinate classes have been defective; as aiming either solely to qualify the pupil for his station, or to give him a chance and hope of rising above that station; either to make the man a mere laborer, or to turn the laborer into a gentleman—the discipline or improvement of the man being too often postponed or omitted. The tuition for the higher castes is equally defective, when it forms gentlemen to be mere gentlemen; where it refers the primary duties to the rank, not to universal obligation. Secondly, when it inculcates the acquirement of mental or personal accomplishments as ultimate ends, without reference either to practical utility or to self-edification. Thirdly, when all apprenticeship is omitted, or an apprenticeship given wholly alien from the peculiar, individual, and functionary duties, as e. g., when a scion of nobility is crammed with the arbitrary technicals of professed scholarship, or wastes his time in learning to do for himself what his steward, his game-keeper, or his chaplain could do better for him. Fourthly, where the whole education is subservient to the apprenticeship. This is, perhaps, the commonest fault of all, especially with that unfortunate class, whose education is to be their portion and means of advancement.

"It bears a creditable resemblance of steadiness and industry, it wins the applause of parents and tutors, it makes shining and rising young men, and sometimes judges, chancellors, ambassadors, and ministers of state. But it does not make good men or wise men either.

"Even if it leave the heart uninjured, it keeps the mind unnaturally ignorant; for, viewing all things in an artificial relation to one object, it sees, and therefore knows, nothing in its true relations to man and the universe. The more their knowledge the greater their errors. The greater their command of facts, the more perilously false their inferences.

"They may, indeed, be wise in their own craft, but they are pitiful blunderers where they step beyond it. Be it recollected that we are not speaking of that devotion of time to a professional study which may be a duty, but of that perversion of self-government which makes the profession all in all."

The doctrines taught in the above paragraph differ widely from the notions commonly entertained by parents and others, on the subject of education, which regard only '*apprenticeship.*'

Instead of seeking solely to qualify the pupil for the business of life, these doctrines enjoin upon us the duty of exercising him as much as possible in studies the nature of which are unworldly, and such as may serve to correct in him mere worldly impressions.

But to do what this implies, and counteract, to any considerable extent, the influence of the spirit of the age, may justly be looked upon as a task the most difficult which education has to perform; it is one, indeed, which mere literary exercises, unless in the most favorable circumstances, are inadequate to. The living time, with its thousands of men, and opinions, and actions, has ordinarily more concern in forming the minds and characters of our youth, than has the discipline of schools or the lessons of school books. The living example is opposed to the written precept, and far more forcible for stamping upon

the mind its impressions. "The spirit of the age and nation," says a modern writer, is school and schoolmaster too—seizing on the pupil with its mighty hands, and with its living facts and forces, and with its unbroken unity of doctrine—never ceasing for a moment, but perpetually repeating its lessons.

While, therefore, every thing is to be done for imbuing the mind of the pupil with correct principles, giving him a taste for the good and beautiful, and making him acquainted, as much as possible with his own nature, he should be removed as far as practicable from the influence of evil example, and the contamination of a worldly spirit.

Example is the most efficatious teacher, and we cannot therefore, be too guarded, both as to our speech and conduct, when in the presence of youth.

The education we give unless of a somewhat practical character, cannot be supposed to possess much efficacy. The young require not only to be told and admonished of what they are to do, and how they are to deport themselves, but to be actually exercised in that conduct which it is desired they should adopt. "It has often been said," observes a moral writer, "and requires to be repeated still oftener, that books and discourses alone are not education; that life is a problem, not a theorem; that action can only be learned in action. A child learns to write its name only by a succession of trials; and is a man to be taught to use his mind and guide his conduct by mere precept?

We must seek for the most favorable circumstances in which to place the pupil, that, while endeavoring to engraft upon his mind those sentiments and principles which we wish him to imbibe and cherish, there may be as little as possible in his ordinary associations which can counteract their influence. If we can succeed in this, and he is under the guidance of enlightened counsels, and with a competent instructor, his proper education will be an easy task.

The present age is too much characterized by half scholarship and superficial attainments; the information generally obtained is imperfect and therefore often erroneous. The surface of education has been greatly extended, and, as a natural consequence, it has lost in depth what it has gained in lateral extension. This is attended with serious evils and verifies the lines of Pope, so often quoted, that "a little learning is 'a dangerous thing," &c., it engenders pride, conceit, and self-will.

The education of the great majority in this country, even of those who make pretensions, is, it must be confessed, very imperfect; not so much, indeed, for want of schooling—which can only lay the foundation—as of subsequent cultivation. Education, and the formation of the mind and character, must, in great part, be the work of each individual himself, but the self-discipline necessary for the task is too seldom undertaken.

After college life is passed, politics or the pursuit of gain soon come to engross the mind; defeat perhaps the half formed intention, and take away all desire for improvement.

I will venture on this subject to extract from the "Democratic Review," the following sentiments of an American writer, as follows:

"The great mass of our American people can read, and do read the

newspapers, and many other things; and all of them fancy themselves competent to sit in judgment on all matters human and divine.

They are equal to the profoundest philosophical speculations, the loftiest theological dogmas, and the abstrusest political problems.

"Filled with a sense of their own wisdom and capacity for sound judgment, they lose all teachableness, and are really in a more deplorable state than if they made no pretensions to general intelligence."* If the minds of American people be really in the condition in which this writer here represents them to be, or even should one-half only of his inculpations be correct, then, truly, it is high time that we bestirred ourselves to produce a better and more reputable state of feeling and intelligence. Nothing can produce this effect but an improved system of education, founded upon enlightened views and properly regulated and enforced under the patronage and with the support of government. With such a system, and the aid of all well-wishers to the cause, we should soon have it in our power to give a very different account of things.

ART. IV.—RELATIVE VALUE OF STONE COAL AND CORD WOOD.

Our enterprising correspondent, H. Smith, Esq., of Louisville, has furnished us with a communication from Professor Walter R. Johnson, of Washington City, containing estimates of the relative value Cannelton coal and cord wood, for the use of steamboots; and also, a letter from Capt. John Carlisle, giving an account of an experiment made by him in the use of coal on the steamboat Marshal Ney. This is a subject of immense importance in the economy of the country, and we trust that the talented and enterprising commanders of steamboats on the western waters, will severally institute a series of observations in regard to the relative value of stone coal and cord wood. For whatever is gained in the cost of fuel, is so much added to the wealth of the country, and will enure to the benefit of the agriculturalist as well as the carrier. Professor Johnson says:

"In recurring to the report on American coals, (page 553, column 4th of the table,) you will observe that the coal of Cannelton, Indiana, (which, until further trials are instituted, we are compelled to assume as the type of western coals,) gave per *cubic foot of fuel*, in the state in which it is delivered to the grate, 348.85 pounds of steam generated from water at 212 deg., while a cubic foot of dry pine wood, as measured by the cord, gave 98.58 pounds of steam from 212 deg.

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* O. A. Brownson.

"From this it appears that in filling a *given space* on board the boat with *fuel*, the choice between Cannelton coal and dry pine wood or other wood having an equal evaporative power, under the same bulk should be made in part with a view to the stowage room, which they respectively require for the same effective power. Now, 348.85: 98.58::3½:1, which shows that filling equal spaces, with the two kinds of fuel, the lengths of trips which could be made without replenishing, would be *three and a half times* as great with the coal as with the wood. I suspect that much of the wood used on western boats is, to say the least, not better, cord for cord, than dry pine wood. If used in a green or unseasoned state, the inferiority of wood must be still more marked.

"I suppose that *space* for the stowage of freight is one thing to be economized on board a steamboat, even supposing the same amount of evaporative power could be had for the same money. As coal in the west is sold, I believe, by the bushel, of which I infer from my experiments, *thirty* will make a ton, measuring forty-seven cubic feet, and wood by the cord of 128 cubic feet, and as by page 547 of report, a true cord of dry pine wood weighs 2689.2 pounds, the calculation of the value of coal per bushel, according to the actual cost of wood per cord, is easily made. Thus, 47 multiplied by 3½, the evaporative power of 1 cubic foot of coal, gives 164½ as the relative value of a ton of coal, and 128 multiplied by 1, (the relative evaporative power of wood,) gives 128. Hence, 30 bushels of coal ought to be worth 164½-128 times, or say 1 28-100 times as much as a cord of wood. From this it will easily be computed, that if stowage room were of no account—labor in handling of no cost—time and the danger of frequent stoppages of no consideration, and the unequal character of wood obtained at different points, no source of annoyance—but the mere first *cost* of wood and coal were the sole criterion by which to judge of their *value*, then the following table would represent the value per ton and per bushel of coal, as compared with assumed prices per cord of dry pine wood, or its equivalent:

Supposed price of wood per cord.	Value of coal per ton of 2240 lbs. or 30 bushels.	Value of coal per bushel.
$1 50	$1 92	6.4 cents.
1 75	2 24	7.5 "
2 00	2 56	8.5 "
2 25	2 88	9.6 "
2 50	3 20	10.6 "
2 75	3 52	11.7 "
3 00	3 84	12.8 "
3 25	4 16	13.8 "
3 50	4 48	14.9 "

Captain Carlisle, writing from New Orleans, on the 6th of January, 1848, says:

"I have the pleasure of reporting to you the following very favorable result of the experiment made on board the steamer Marshal Ney, on her first trip to New Orleans from Louisville, to test the compara-

tive economy in the use of wood and coal for steamboats. On leaving Louisville, I had on board only 10 cords of wood. At Frank O'Hara's wood yard, we took on board 15 cords of drowned wood, with which we found great difficulty in making steam, till we obtained some of your coal at Cannelton, to aid in burning it. At your coal banks we took on 2,100 bushels of coal; we subsequently took 15 cords of wood at Columbus—10 cords at Commerce—37 cords at Napoleon—40 cords at a wood yard below Vicksburg, and 30 cords at Mt. Pleasant—making in all 147 cords. On my arrival at the levee in New Orleans, we had remaining unconsumed about 45 cords of wood, and over 600 bushels of coal, making the actual consumption of the boat, carrying near 1,000 tons of freight, in a long passage of near nine days, only about 102 cords of wood, and 1,500 bushels of coal.

"The experiment was made under very unfavorable circumstances, as the boat gathered nearly all of her cargo in small lots, at numerous points along the river, and was obliged to get up steam and put out her fires at every stopping place, or allow them to burn for hours when she was not running, which increased her consumption of fuel, and added near two days to the length of her trip. We left Louisville immedialely after the subsidence of the high water, in December, and the wood everywhere on the Ohio river, and for some distance below the mouth, was wet, and unfit for use, and required more than an ordinary quantity of coal to aid its combustion. Comparing the consumption of fuel by the Ney, even under these unfavorable circumstances, with that of my former boat, the Harry of the West, with the same power and engines, I estimate the saving of fuel in the use of your coal instead of wood, to be more than 30 per cent., taking the average price of wood for the trip to be $2 50 per cord, and the price of coal at 7 cents per bushel. When another opportunity occurs, I intend to make another experiment of the comparative expense of wood and coal for steamboats, and will communicate to you the result of the tests made under more favorable auspices. I found your coal formed no clinkers, nor did it obstruct or injure our grate bars.

"Your company and others would confer a great benefit on that important branch of commerce in which we are engaged, by forming depots for your coal at convenient points on the Mississippi and lower Ohio, where we could get a daily supply as we passed, and as we needed it.

Respectfully,

JOHN CARLISLE,

Captain of Steamboat Marshal Ney.

ART. V.—BUILDING AND BUILDING MATERIALS.

BY B. A. ALDERSON, OF MISSOURI.

The ill-effects which flow from the errors committed by those who have preceded us, may extend down through a long course of time; but, when they become known, and the source from which they emanate detected, it becomes our duty when in the possession of such knowledge, to make it public for the benefit of our fellow-men. With this conviction of duty, I feel that a few remarks on the nature and quality of materials, and the manner of combining them in the construction of buildings, may not be irrelevant to those engaged in the erection of dwellings, store-houses, &c., especially to those who build but once in a life-time, and only begin to learn, at the completion of their improvement, what should have been stipulated in the contract at the commencement of the work. It is for such that I write, and not for adepts in the business.

Many persons, who have supposed they were getting substantial walls erected, have been much imposed upon. For instance, I have known workmen in the country to contend that mortar, in order to work to advantage, and not set too quickly, must contain a portion of loam or other extraneous matter; and this paste—which we may justly denominate *mud*—being put on in layers of unreasonable thickness, and exposed to the pelting rains and rushing tornadoes—has caused greater destruction of property than perhaps all other evils combined. Prices paid for work are, or should be, such as to justify its being well executed; and proprietors of buildings should be able to judge when work is being done in a substantial manner.

The clay for brick should not contain so much sand as to render them heavy and brittle, but sufficient to prevent shrinkage and cracking in the burning. That the brick may not crack when laid out to dry, no more water should be used than is necessary to give to the paste a proper consistency. A very effectual and regular method of mixing the materials, is by passing them through what is called a pug mill.

In burning, the fires should not be rushed until the steam shall have entirely passed of. The best brick may be known by their clear sound, red color, and when broken are found to possess a fine, compact texture.

The quantity of lime required for good mortar is just so much as will fill up the interstices between the particles of sand; and experience has proved that this end is most generally gained by using one part of good common lime, and two parts of clear, sharp sand. Should the sand contain impurities, it may be cleansed by passing it through several waters. Owing to the great avidity bricks have for water, thin tempered mortar is the best, as it does not dry so quickly, and

makes closer joints. The amount of mortar used should be only so much as will keep the bricks out of contact.

The "Flemish bond" is the most common for thick walls, and should have every fifth or sixth course headers. In building a nine inch wall, as it is termed, a good means to prevent the damp from penetrating to the interior, is to leave a space of one inch between the longitudinal layers of brick, thereby forming, as it were, two separate walls, and bind them together by each course of headers. This is said to make equally as strong work as the ordinary method.

In order to prevent the walls—especially the corners—from cracking, all parts of the building should be carried up regularly at the same time. What is called toothing, should not be allowed; but, when a corner is to be raised, give it sufficient base on each wall, so that each line of slope shall correspond to the hypothenuse of its respective triangle—which triangles are equal.

In building the jams and chimneys, very substantial and beautiful mantles may be worked in of solid brick-work, showing the columns and all of the projections to suit the fancy of the architect, and then finished off with cement. They are truly very neat and substantial; and, after completed, there is no danger from fire.

Measuring the brick-work of a building is another thing at which many proprietors cut their wisdom teeth, when too late to do any good. The contract is generally to lay the brick at so much per 1,000; but, when it comes to measuring, the mason contends for the corners being measured twice, and says it is custom; so of the plasterer, who does his work at so much per square yard, counting the openings one-half; but, when it comes to measuring the work, to the astonishment of his employer, claims the space occupied by the washboard and all door and window-casings, at full price! and if objected to, claims it as a matter of custom. Now, it appears to me that these customs are perversions of the language of the contract, and unjust—especially as regards the washboard, which should by no means be included in the estimate of work performed; for, if the washboard were left off entirely, then the plastering would, of necessity, be joined to the floor, requiring more labor and pains, at the same charge. Being governed by custom, which is known to but one of the parties, in estimating work, instead of the strict letter of the contract, not unfrequently produces unkind, but even bitter feelings between the parties.

As regards the permanence of a building, much depends upon the carpentry; for a bad piece of carpentry may, of itself, destroy the best constructed brick walls that can be reared. I once saw a costly building erected for a hall of science, and under the eye of science, which three years afterwards was literally being torn in pieces by the defective carpentry; and this injury consisted principally in placing the upper tier of naked flooring transversely of the rafters, and allowing the feet of the rafters to rest on the wall-plate, without being connected, by substantial tie bearers.

This was contrary to all rules of mechanism, as the upper joists should always be in the same direction as the rafters, so that each joist may act as a tie beam. Great injury is frequently sustained by the use of green timber. Where the span is too great for one contin-

uous joist to reach entirely across, let one or more girders be used, as the case may require, and so connect the joists that each may bear a part in counteracting the outward thrust of the roof.

The practice of occasionally sawing large girders down the middle, reversing the pieces, and bolting them together again, is very well—as an opportunity is thus afforded of detecting any defects in the centre, and at the same time it has a tendency to equalize the strength of the beam. A defective beam may, by this operation, be strengthened; but a perfect piece of timber would be rather weakened by the operation of cutting and boring holes for the pins. The practice of cutting girders down the middle, is of very ancient origin, and is generally attributed to Vitruvius; who directed that a space be left between the beams for forming the architrave over columns, in order to prevent their decay; and for this reason, no doubt, girders were first ripped.

When a truss frame is used to increase the stiffness of the girder, thin pieces of metal may be inserted between the ends of the braces and shoulders in the post and upper side of the girder. These will assist in retaining the frame in its original position, by preventing the fibres of one piece from entering into the interstices of the other.

The outward thrust being inversely, as the angle of elevation of the roof, unless the feet of the rafters be well secured, the danger of forcing out the walls is very great; and particularly so, if the roof be massy and of small pitch.

The pitch of the roof is a matter of greater moment than it generally receives at the hands of the builder or architect. In a climate where the roof will never be burdened with a heavy mass of snow, the rise or pitch need not exceed *two-ninths* of the span; and more particularly so, if the covering be of slate or any other kind of metal, as it would not be so much of an object to have the rain run off quickly, to prevent decay from damp, as if the covering were of wood. The pitch recommended by Paladio, in Italy, was twenty-four degrees, being nearly two-ninths of the span.

In the roof of small pitch, as recommended, we not only add to the beauty of a building, but also add greatly to its security against storms, and the destructive action of the terrible tornado. This security is gained by there being a less surface exposed to the action of the wind, which I think can be proved to the satisfaction of any one who will examine the subject.

In a table, derived from the experiments of that distinguished engineer, John Smeaton, we find it recorded that wind, at a velocity of twenty-two feet per second, which is equal to fifteen miles per hour, causes a pressure on each square foot, vertical, of 1,107 pounds avoirdupois; and this result has been fully confirmed, and it would seem entirely settled, by the experiments of the Chevalier De Pambour, made while in England, with a view to ascertain the amount of friction, &c., of locomotive engines and their trains, and also the amount of resistance offered by the atmosphere on a perfectly calm day. The result of his experiments was, that a car, moving at the velocity of twenty feet per second, equal to thirteen and six-tenths miles per hour, met with a resistance from the atmosphere, for each square foot vertical, or front, of 0.915 pounds.

In the same table of Mr. Smeaton, as already referred to, we find it recorded that wind, progressing at a velocity of one hundred miles per hour, which is equal to 146 and 7-10 feet per second, produces a pressure of 49 and 2-10 pounds per square foot, and will overturn trees and buildings. The greatest velocity of wind on record, which I know of, is that related by M. Rochou, which was at a velocity of 109 miles per hour; and its force against a perpendicular plane of one foot area, was estimated at fifty-eight pounds and 45-100; so that the tornado of May 7th, 1840, which laid in ruins one of our southern cities, could not have produced a pressure of less than about 60 pounds per square foot vertical.

It may now very readily be shown what a decided advantage roofs of moderate elevation possess over those of great pitch. Let us take, for example, a roof of 40 feet span, and the pitch 2-9; and another of the same span, with a rise or pitch of 1-3, as is most usual; the gable end with the rise of 2-9 the span, would give, in round numbers, an area of 177 feet, while that of the 1-3 rise would give an area of 264 feet; their difference is 87 feet, which, multiplied by the pressure per vertical square foot—60 pounds—gives a product or strain of 5,220 pounds greater against the gable end of the 1-3 rise, than acts against the one with a pitch of 2-9 the span. There is, again, an additional force exerted on the face of the high roof, over and above that of the pressure against the sides of the low one.

A fine opportunity is now afforded by the telegraph, in different parts of the country, to ascertain the velocity of storms; but I have no distinct recollection at this time of any observations of the kind having been published. Such observations would be of great interest to the scientific and curious.

ART. VI.—AGRICULTURAL.

THE CULTIVATION OF SUMACH.

BY GEO. B. DAVIDSON, ESQ., OF ILLINOIS.

The only effectual method of preventing the importation of such commodities as can be cultivated or manufactured at home, is to produce an article of equal quality at an equal price. This has already been accomplished to a limited extent, so as to do away entirely with the importation of certain articles from other countries. No one thinks of importing wheat or flour into the United States, for the reason that wheat and flour of home production, can be had at such prices as to prevent the importer from realizing any profit; consequently, the importation of such articles is the same as prohibited; and this principle will hold true with respect to every article raised or manufactured

in the country. Whenever the importer ceases to realize a profit on any article, from that moment its importation ceases. And on the other hand, there is no article from the importation of which a profit can be realized, but is sure to find its way to our shores, no matter to what extent the same article can be produced in this country. The primary—and we might add only—object of commerce is gain; and whatever good society at large may derive from it, is merely incidental. Capital is extremely selfish. Rarely, if ever, is it invested for purposes merely philanthropic, or simply with a view to the general good of society. Yet such is the connection between cause and effect—so constituted is society by a wise arrangement of nature—that no matter how selfish soever the purposes on which it is employed, it seldom, if ever, fails of producing some good. I do not mean to be understood as opposing the investment of capital in commercial enterprises. On the contrary, we regard an extensive and well regulated commerce as evidence of a nation's greatness. Yet it has its bounds, and if these are passed, it prevents the development of the resources of the country, by absorbing too much of its capital. For this reason it is important that the mind of the nation be not allured by its splendor. It is too much to tax ourselves for its support, and the support of foreign countries, at the expense of leaving untouched and unexplored, the inexhaustible resources of our own. It may seem inexplicable, that iron should be imported into the United States, when she has, in her own bosom, inexhaustible quantities of that useful metal. But so it is, and so it will be, until capital can be profitably invested in that branch of business, If iron were manufactured in the United States of as good quality, and at as cheap a rate as that imported from Europe, no profit would accrue to the importer of the foreign article; consequently, its importation would cease, which would be a great saving of capital to the country, besides furnishing constant employment to a great number of hands. And if this branch of business could have been prosecuted with as little ready capital and skill as is necessary to commence farming, the hardy pioneer, who has brought the wilderness to fruitful fields, would doubtless, long ere now, have brought it to a point that would have rendered unprofitable the importation of foreign iron.

These remarks may seem desultory, considering the special purpose of this communication, which is designed to call the attention of agriculturalists to a plant which is imported into this country in large quantities, at a high price, and which, we verily believe, would amply remunerate the American farmer, should he be induced to undertake its cultivation—yet, as we intend continuing our communications, they may serve as a general introduction.

The plant referred to is *Sumach*, a shrub indigenous to this country, and grows wild in almost every part of it. It is a well known plant, and in some parts of the country is used in dyeing, and we believe it is used as a medicine in Thompson's system of practice. But the business in which it is most extensively consumed, is in tanning morocco leather—it being the principal article used for that purpose. It is with a view of inducing the farmer to raise a supply for this demand, and secure to himself this source of wealth, that we have directed his attention to the subject. We have no means at present of ascertaining

the quantity of sumach annually imported into the country, but judging from the quantity of morocco leather manufactured, the quantity must be considerable. But no matter how small the quantity, when it can be produced at home it ought to be.* We draw our supply at present from Sicily, where it is principally cultivated, and where, it is said, the best quality is produced; if mixed with American, however, it is better for tanning. Let the intelligent farmer ask himself what advantage Sicily has over the United States. If he can find no satisfactory answer, which we opine he will not, let him resolve on the cultivation of sumach, which, doubtless, will be profitable to himself, and add an important feature to the independence of his country. Sicily lies between 37 and 39 degrees of north latitude, and if she can raise to export, surely the United States, extending south and north of these lines, can raise sufficient for domestic purposes.

The price of sumach at New York, at present, is from $55 to $60 per ton. What quantity could be raised on an acre, we are not aware, but we think when it is once properly tried, it will far excel in value a crop of wheat, corn or potatoes.

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*We extract the following paragraph from the Patent Office Report, for the year 1845: "It is stated in the American Agriculturalist, that during the year 1842, 10,000 bags, equivalent to 700 tons of sumach, nearly one-twentieth of the home consumption, have been sent from the south, principally from Virginia. The writer says that such as can be raised in South Carolina, Georgia, Alabama, and more particularly Florida, would be of better quality. It should be gathered as soon as ripe, and planted soon, so as not to become too old. This is said to be an important fact for southern planters; for, by planting the seed, and mowing down the shoots three times annually, they might obtain from three to five tons per acre, with much less expense and trouble, than by gathering and bringing home the natural growth, scattered extensively over the country. The sumach is perennial, and when once planted would last for ages--the crop when sown, annually increasing, until the ground becomes full of roots. In the same Journal for September, 1843, may be found an article on the cultivation of sumach, with the time for cutting, and of preparing for the market." We have no statistics in our possession showing the quantity of sumach annually imported into the United States. We infer from the remark in the commencement of the foregoing extract that the annual consumption in the United States is about 15,000 tons, and it does not appear that any is prepared for market north of Virginia. At $50 per ton, this would amount to $750,000, equal to about one-third of the value of the hemp crop. We are, however, inclined to doubt the inference authorized by the foregoing extract from the American Agriculturalist. We learn from a table of imports into the United Kingdom, published in the Patent Office Report for 1845, that the quantity of sumach imported into Great Britain for ten months ending on the 5th November, for three years, was as follows: In 1843, 11,033 tons; in 1844, 7,732 tons, and in 1845, 9,328 tons.

We are pleased that our correspondent has brought the subject up for the consideration of the farmers of the west, and trust that some of them will be found sufficiently enterprising to make an experiment. There is, perhaps, no other country in which there is so great an over-production of the leading staples, and the introduction of a new article for commerce may be considered as so much gained to the wealth of the country.—[Editors.

LIBERAL PREMIUM TO WINE GROWERS.

We invite the attention of our readers to the premiums offered by our enterprising and public-spirited citizen, ALEXANDER KAYSER, ESQ., for the best specimens of wine, to be produced by the farmers of Missouri, in the present and the two next succeeding years. Although requested not to treat the matter as evincing any degree of liberality on his part, yet we may be permitted, in behalf of the farmers of Missouri, to thank him for the undoubted evidence thus given of the interest which he feels in their prosperity.

This is, we believe, the first substantial encouragement that has been given to grape growing by any individual in Missouri; and we trust that this fact will be remembered, and perpetuated by an appropriate denomination of the best specimen of Missouri wine, produced from the vintage of 1852.

ST. LOUIS, MARCH 2d, 1849.

To the Editors of the Western Journal:

GENTLEMEN:—Enclosed be pleased to receive an advertisement to the farmers of our State, offering them certain premia for wine to be grown by them. The same is at your disposal, if you should deem it worthy your own and your readers' notice.

I trust you will not treat the matter as evincing any degree of liberality on my part. I am far behind most of our fellow-citizens in useful, though, perhaps, more private undertakings; and as far as the farmers are concerned, I am returning them but a penny for their pound.

The manner in which I interweave questions of State and morals, with a subject of agriculture, cannot appear strange to you, who are used to draw lessons of morals and ethics from every work of the Almighty. To you, the pagan worship of Ceres denotes one grand and important step in civilization, beyond the time when Apollo's twin sister, Diana, sped the arrow at both game and men.

I am your obedient servant,

ALEXANDER KAYSER.

TO THE FARMERS OF MISSOURI.

Believing that you have already proven the adaptation of our State for the culture of the grape—hoping that the industrious farmer, in his secluded dale, will take it kindly, when our city notices his civilizing efforts, and by the vine of reciprocity slings him still more strongly to its magic growth—calculating that, by the cultre of the grape, our State may annually retain and earn many ten thousands of dollars—learning from history that the grape diminishes the use of spiritous liquors, and truly advances habits of national temperance.

I have concluded to obtrude myself on your notice, and in following up a former essay, to offer you a series of three premia for the best wine to be grown by you in the present and two next succeeding years.

The awards will take place in the fore part of the respectively succeeding years Mere dilettant wine growers are excluded from a participation in the premium, since my object is to encourage *those* who make the growth of the grape one of their regular *livelihood* pursuits. Competent men I perceive consider the matter no more problematic, and hence I address myself to the man who himself plants the vine, hoes the soil, gathers and presses the grape, and pockets his ringing dollars for the sweat of his brow. Care will be taken to surround the competition for the premia with reasonable safeguards. Experienced persons will be selected as awarding committee, and all necessary details will be timely published. If I could at present afford it, I would offer a prospective premium for the best native almond and the best re-claimed or ennobled hickory or walnuts. I think that the time is not far off, when the country of the setting sun will likewise, as far as genial fruits are concerned, enter into competition with the Levant; and, inasmuch as the man who gives, has the right of prescribing the condition of his gift, I propose to add some thorns to my roses; but I trust that, upon reflection, the good farmers will be convinced that those thorns will only sting certain people. The intelligent, upright farmer, and if his hands were as delicate as those of his blooming daughters, need not to fear them.

The conditions, then, are these:

The premium wine grown in 1849, (premium of $100, to be awarded in 1850,) is to be called or branded forever "*The Ore Blossom*," so that the drinker may be reminded of the rich iron, lead, and copper ores, wherewith Missouri's hills are pregnant, and of the metallic currency principles, with which Missouri's great statesmen are laying the *moral* basis of that wondrous national commercial greatness, which will reduce foreign navies into mere flotillas, and yet free us from the effeminate demoralization which generally attends commercial greatness.

The premium wine grown in 1850, (premium of like amount, to be awarded in 1851,) is to be branded "The Viaticum," meaning thereby the allowance which every tasty Oregon, California, or China traveler will take whilst he whirls over our great national railroad, or the good farmer, whilst with his team he moves along the margin of *the road.*

The premium wine grown in 1851, (premium of $125, to be awarded in 1852,) is to be branded "*The Free Soil Florescence*," for the reason that about and after the time of its growth, nurses will no more scare their nurslings by the threat of nullification.

To secure the safe rendition of the premia against all accident of death, or otherwise, I have placed the necessary securities in the hands of my two valued fellow-citizens, Messrs. O. D. Filley and Adolphus Meier.

ALEXANDER KAYSER.

GRAPE CULTURE IN INDIANA.

We gather the following information relative to grape culture in Indiana, from a letter of Amos Goodwin, Esq., of Charlestown, Clark county, Indiana.

Mr. G. estimates the number of acres in vineyard in Clark county, at 100 to 120, exclusive of small portions cultivated for family use, and is of opinion that the quantity will be doubled in two years.

Taking his own vineyard of eight acres for a sample, the vines yield an annual average of about 200 gallons of wine, principally, in fact, entirely Catawba, which, as a wine grape, Mr. G. thinks has no equal. He cultivated a few Isabellas, but not for wine.

His method of cultivation is, after the ground has been properly

prepared, to set the vines in rows, six feet apart one way, and four feet apart the other. He trains them on trellises, made by setting stakes five feet and a half long above the ground, and nailing to them strips of boards. He has tried wire trellis, but found that the sun heated the wire to such a degree, that, besides killing the tendrils, it did great injury to the young wood. His vines succeed best on the highest lands. In this the experience of his neighbors accords with his own. The early frosts seldom injure the young shoots except in low grounds.

He does not ferment his own wine, but sells the "must" to the vintners, at prices ranging from 60 to 80 cents the gallon, making the average proceeds $140 per acre. This is certainly much better than grain growing. He estimates the labor necessary to cultivate an acre in grapes, as only twice as much as required for an acre of Indian corn. The wine crop of ten acres in vineyard would be worth about $1,400. The corn crop of 20 acres, requiring the same labor, not more than $250.

We concur with Mr. G., that this difference in the profits of culture cannot last many years. Vineyards are rapidly increasing throughout the country; the price of wine will fall. Yet there is every inducement to continue, and nothing to discourage the multiplication of vineyards in the west. Every successful vineyard is an advance towards universal temperance in the use of alcoholic beverages.

Mr. Goodwin describes a method of grafting vines, which is new to us, and will be so, we presume, to the majority of our readers. He cuts off the old root with a horizontal cut, some two inches or so below the ground. He then takes a gimlet the size of the cion to be inserted, and bores perpendicularly, from one to four holes, two or three inches in depth, according to the size of the root into which he inserts the cions, the loose bark having been first removed. The cions should fit accurately. This method, he says, has been with him universally successful.—[*Valley Farmer.*

TEA CULTURE IN THE UNITED STATES.

At a meeting of the New York Farmers' Club, on the 16th January, Mr. Meigs read extracts from a letter by Mr. Junius Smith, dated Greenville, S. C., on the 29th ult., giving further particulars of his success in introducing the plant into this country. He observes that on the 14th of last month he planted out the tea seed which he had taken to the Southern States; and on the 26th he planted out the first tea shrubs ever cultivated in the United States for agricultural and commercial purposes. Several of the plants opened out on the 28th, and were in full bloom, with their leaves fresh and green, as if growing in China; others with the blossom-bud just showing its snowy bosom. We may, therefore, say, continues Mr. S., that the tea plant is in blossom in South Carolina.

Mr. Smith observes that he is delighted with that part of the country as a tea growing district, and thinks the soil, climate, &c., most desirable for that purpose.—[*Valley Farmer.*

CULTIVATION OF THE STRAWBERRY.

The result of the following experiment, the first of the kind in that section of the country, was given at the request of the editor of the New York Farmer and Mechanic, by Mr. C. H. Starr, of Groton, Connecticut, who has been engaged some four years in his experiments, and has succeeded in producing some strawberries of unsurpassable fineness.

The varieties raised were Hovey's seedlings, with a few English plants as fructifiers, and were set in April, in rows three feet apart.

The soil was a moist loam, half an acre in extent, well pulverized, by plowing, and manured at the rate of 20 cords to an acre, of sea weed and fish. The first year, beets, or other vegetables might be grown without detriment to the fruit.

The product from the half acre under cultivation, last season, was 2,000 quarts of fruit, some of which measured 4½ inches in circumference.

ESTIMATED EXPENSE OF CULTURE PER ACRE.

20 cords of manure, or its equivalent,	$40
Expense of plants, 10,000 at $2,	20
Total expense of labor the first season,	100
Total expense incurred the first year,	$160
Total expense (labor only,) second year,	160
" " third year,	160
" " fourth year,	160
	$640

VALUE OF THE CROP.

50 bushels of beets the first year,	$20
4,000 quarts of strawberries the second year,	
4,000 " " third year,	
4,000 " " fourth year,	
12,000 quarts of strawberries in all, at 12 cents	1,440
Total value of the crop for four years,	$1,460
Leaving a nett gain for four years of	$820
Or for each year,	205

The above is simply what has been done in the ordinary culture, without eny particular effort or extra exertion, and we have no doubt the crop could be still further increased by improving the variety, and with a better opportunity of selecting the soil and varying somewhat the kind of manure.—[*American Agriculturalist.*

COMMERCIAL LAW CASES.

Hyde & Oglesby vs. Steamer Yazoo, et al.

This case presented to the Supreme Court a question of privilege. The facts of the case are as follows: Morrison & Co., of New Orleans, sold the steamer Yazoo to John Culver, on the —— day of May, 1847. On the 2d day of August, 1847, Culver, who was yet master and owner of the boat, which was then lying in the port of New Orleans, borrowed from Hyde & Oglesby the sum of $1,200 cash, for which he, Culver, gave to Hyde & Oglesby his draft on himself, payable in St. Louis, for which port the boat sailed on the day of the loan. Culver accepted the draft in St. Louis, but never paid it. On the 17th of August, Culver, then being in St. Louis, sold the "Yazoo" to John Eaton. On the 14th of September, Eaton, through his agent, sold the boat to Messrs. Hunt & McDonough, who brought the boat to New Orleans in October, 1847, where she was seized by the plaintiffs, who claimed to be paid the amount of their loan, by privilege and preference over all other creditors.

Messrs. Hunt & McDonough appeared, denied indebtedness to plaintiffs, and claimed the boat as their property, averring that plaintiffs had no privilege on the boat for restitution of the money advanced by them to Culver for the purposes of trade. On this issue the parties went to trial, and the District Judge was of opinion that article 3,204 of the Civil Code gave plaintiffs a privilege. Plaintiffs had judgment and privilege on the boat, from which judgment Hunt & McDonough appealed.

The Supreme Court, acting under a very clear article of law, and a number of cases cited by defendant's counsel, rightly concluded there was no privilege whatever on the boat for the payment of plaintiffs claims; the settled principle being as follows: That advances made to a captain or owner of a vessel in her home port, even though that money be applied to the payment of privileged claims, gives no privilege to the lender. In the case of the Agricultural Bank vs. bark Jane, it was held by the Supreme Court, that although a party paid the privilege claims against the vessel himself, he had no privilege, because he did not take a special subrogation from the original privileged creditor. The reason of that decision is this: privileges are *stricti juris*, and can only be enjoyed when they are pointedly given by law. Great caution should be observed by merchants in their transactions with vessels. The law that gives a privilege on the vessel for advance, has its origin in the necessity of preserving and protecting commerce. Thus, when a vessel is on her voyage, and meets with accident by which she is distressed, it may be necessary for the preservation of the vessel and cargo, to obtain an advance of money, in order to enable her to proceed on her voyage. This would be a difficult matter—the vessel being in a strange port—if it were not that the law has provided for the exigency, by giving to the lender, under

such circumstances, a privilege on the vessel for the restitution of his loan. The law also permits the captain of the vessel—who is agent of both owner and consignee, or shipper—to *sell* freight, if the safety of the vessel and cargo demand it. The same principle governs in marine law, which provides that every thing must yield for the general safety. But in all these extreme cases, the vessel must be abroad, for it is impossible that any such exigency could arise in the home port of the vessel. It was not necessary for the Court to determine what causes destroy privileges on vessels, because the claim of plaintiffs never enjoyed any. The article of law under which the District Judge gave plaintiff a privilege, reads as follows. Civil Code, Art. 3,204, ¶7: "Sums lent to the captain for the necessities of the ship *during* the *last* voyage, and reimbursement of the price of merchandise sold by him for the same purpose."

In this case the vessel was *not on a voyage*, but lying safely in her home port, when the money was loaned. The only other word of law to be found in our code, giving a privilege on the vessel for money advanced, is to be found in the ninth paragraph of the same article of law above quoted, which reads thus: "Money lent on bottomry for refitting, victualling, arming, and equipping the vessel, before her departure." In the present case there was no loan on bottomry; it was a loan on accommodation and friendship, and not on a bond. Plaintiffs took a draft for restitution. A lender on bottomry has the vessel hypothecated to him as security. In this case the vessel required no "*refitting;*" her captain wanted a loan to pay debts on his boat, for which she was liable to seizure. The plaintiffs have been unfortunate, but it must be borne in mind that they might have made themselves secure by obtaining from Culver a transfer of his freight list, which they could have sent to St. Louis, and thereby collect from the various consignees, freight money to the amount of their loan. This was not done, and Culver was permitted to collect his own freight, and allow his acceptance to go to protest.

All these facts, and the law bearing upon the case, are clearly and forcible presented in the opinion of the Court, which does not shake any previous rule of decision on the subject of privileges, but more clearly defines the rights of parties under existing laws and numerous decisions. The judgment of the District Court was reversed at plaintiffs' cost.—[*N. O. Crescent City.*

RAILROAD TO THE PACIFIC—SENATOR BENTON'S BILL.

With the present number we close the very able essays "on Eastern Commerce," by J. Loughborough, Esq., of Missouri; and now we respectfully request of our readers to take them up, commencing with the December number, and read them all in connection. These articles evince great research; and, where the subject admitted, are written in a spirited and pleasing style. Considered as a literary

performance, they are calculated to place the author in the first rank of American writers.

In connection with the subject, we publish the following extract from Senator BENTON's speech, delivered in the Senate, on the presentation of his great measure of a "railway to the Pacific." With our friend Loughborough, we must, however, be permitted to doubt whether any considerable portion of the commerce of Europe with Asia, will be carried across our continent, as supposed by Senator Benton; but, be this as it may, the objects to be obtained by constructing the road, are sufficient without this trade, to induce the American people to enter upon the enterprise, should it cost many times the amount of money which will be required to construct it. We take occasion, also, to remark that the principal difficulty apprehended hy the honorable Senator—the snow and ice of the mountains—may be easily remedied by constructing the rails on piles, as suggested by Mr. Loughborough.

If, in reading the following remarks, there be any whose hearts do not glow with gratitude in view of the glorious destiny that awaits us as a nation, such must be dead to every sense of patriotism, and unworthy of the name of American citizens.

Mr. Benton said:

The means of the United States for this construction are ample. The length of the road appals some persons. Sir, it is a case in which the length, in reference to the means, makes no difference. It is not a case in which money is to be raised from another source in order to defray the expenses of the road. It makes itself. The whole country belongs to the United States, saving the mere extinction of the Indian title. It is all public land—a great belt of public land equal to the whole length of the Mississippi river, covering seventeen degrees on the Pacific coast, and as much in the valley of the Mississippi. Out of that the bill proposes that a per centum shall be taken from all the sales, and that per centum shall be applied to the construction of the road. Now, sir, in this point of view, the whole country being public land from the frontier of Missouri to the Pacific Ocean, every mile provides for itself. The distance of five or six hundred miles, right and left, is public land, and this is put into contribution for the construction of the road. All the sales are to contribute. It is, therefore, no more to make a long road than a short one.

I propose, Mr, President, in view of the magnitude of this work—in view of our dominion over the public land, throughout its whole extent—in view of the uses to which this road may be applied, not only in our day, but by our children, to have it projected at once, and upon a scale commensurate to its future destiny, be that as great as it may.

The proposition in the bill is, that there be reserved a breadth of one mile frontier of Missouri to the Pacific ocean—a breadth of one entire mile—for the purpose of laying down, at once, one track, one

road, reserving enough for as many tracks, and independent of each other, as shall be necessary in all time; for all the varieties of roads that are now in use, or which may come into use in the unnumbered generations which the road is to benefit. I begin with railway, as far as practical and advantageous, leaving it to practical men to say where it is not. The difficulty which presents itself to my mind is the deep snow, which continues for so many months in the year, and lies so deep among the Rocky mountains. It is for practical men to say where the road can go there, or whether it will be necessary to find some other conveyance—the sleigh, for example—for that region in the time of the snows.

I propose to reserve ground for all sorts of roads—railway—plank—macadamized—more than that—room for a track by magnetic power—according to the idea stated, I believe, by Professor Henry, and, to me, plausibly pursued by Professor Page, of the Patent Office, if that idea ripens into practicability—and who can undertake to say that any idea will not become practicable in the present age? But, Mr. President, the bill contains another provision, that there shall be a margin reserved out of this breadth, of a mile, for a plain old English road; such as we have been accustomed to all our lives—a road in which the farmer, in his wagon or carriage, on horse, or on foot, may travel without fear, and without tax—with none to run over him, or make him jump out of the way. I look forward to the time when this whole continent is to be settled from one end to the other—when there are to be towns and villages upon it—when neighbors will want a convenient road. They may there find a space for them, in which they shall not give way to the cars or anything else—a road not to be interfered with.

The leading idea, then, is, that we reserve a breadth of land upon which we may lay down different tracks of road, independent of each other, to be kept unconnected with each other; to be adapted to the different means of conveyance; and to be reserved for all time to come. It is a wonderful circumstance in the history of the world that there should be a nation whose domain is so extensive that she is able to lay down as she chooses, by law, a road across a continent, the whole distance under one flag and one law. It is a wonderful contingency happened to us, and one which we should avail ourselves of. A part of this plan, Mr. President, is, that there should be military stations along the road, for its protection and support. It would be in vain to have a road without it. We want protection and we want support. Settlers will immediately establish themselves about every one of these stations, and will furnish the means of support to them all. Then, Mr. President, the wires can be stretched. As soon as this route is established, and this protection given, the wires can be stretched upon the whole route. Then, standing upon the shores of the Atlantic, you shall hold converse with him who stands upon the shores of the Pacific ocean. You shall talk to one another three thousand miles distant.

Nothing, Mr. President, is more essential than roads. It is an old theme, sir; but it will bear the suggestion that no civilized people can live without roads, and that it is the indispensable duty of every nation

which has acquired any new possessions, to open communication with it. We know that the Romans—from whom we borrow so many of our ideas, useful or grand—never considered a conquered territory added to the republic or the empire, until it was perforated by a road. There was no annexation, in their idea, until there was communication. The idea was well founded, sir, and one which we can practically carry out. Large and grand as our project of roads seems—from the Mississippi to the Pacific, and a mile in width reserved for many tracks—it is almost insignificant, compared to the roads of the Roman empire. Her territory was not greater than ours—not so compact—her population not so homeogeneous as ours, nor at the greatest as great as ours will be in the lifetime of the child now born; and yet her roads far transcended in length and number anything that we now propose. Here is what Gibbon says. After enumerating the four thousand cities belonging to the Roman empire, in Europe, Asia, and Africa, he goes on to say:

All these cities were connected with each other, and with the capital, by the public highways, which, issuing from the Forum of Rome, traversed Italy, pervaded the provinces, and were terminated only by the frontiers of the empire. If we carefully trace the distance from the wall of Antoninus to Rome, and from thence to Jerusalem, it will be found that the great chain of communication, from the northwest to the southeast point of the empire, was drawn out to the length of four thousand and eighty Roman miles. The public roads were accurately divided by mile-stones, and ran in a direct line from one city to another, with very little respect for the obstacles either of nature or private property. Mountains were perforated, and bold arches thrown over the broadest and most rapid streams. The middle part of the road was raised into a terrace which commanded the adjacent country, consisted of several strata of sand, gravel and cement, and was paved with large stones, or in some places near the capital, with granite. Such was the solid construction of the Roman highways, whose firmness has not entirely yielded to the effort of fifteen centuries. They united the subjects of the most distant provinces by an easy and familiar intercourse; but their primary object had been to facilitate the marches of the legions; nor was any country considered as subdued, till it had been rendered, in all its parts, pervious to the arms and authority of the conqueror. The advantage of receiving the earliest intelligence, and conveying their orders with celerity, induced the Emperors to establish throughout their extensive dominions the regular institution of posts. Houses were everywhere erected at the distance of only five or six miles; each of them was constantly provided with forty horses, and by the help of these relays it was easy to travel a hundred miles in a day along the Roman roads. The use of the lots was allowed to those who claimed it by an imperial mandate; but, though originally intended for the public service, it was sometimes indulged to the business of private citizens.

Such was the extent and solidity of the Roman roads—a single line of road above 4,000 Roman, and equal to 3,740 English miles—and the 4,000 cities of the empire all connected with roads of equal solidity besides. The road which we propose is only half the length

of one chain of theirs. I mention them for their magnificence—their grandeur—and as presenting an example worthy of imitation. The road I propose is necessary to us, and now. We want it now. The state of our possessions on the Pacific demands it. The time to begin has arrived. All the necessary information is on hand. The means are ready. The title to Oregon is settled, and a government established there, and population is growing up. California is acquired; people are there: and a government must follow. We have a fleet on that coast—troops there, and going. Streams of population are concentrating there. Since the discovery of the New World by Columbus there has not been such an unsettling of the foundations of society. Not merely individuals and companies, but communities and nations are in commotion, all bound to the setting sun—to the gilded horizon of western America. For the want of an American road, they seek foreign routes, far round, by sea and land, to reach by an immense circuit what is a part of their own land. Until we can get a road of our own, we must use and support a foreign route; but that is a temporary resource, demanded by the exigency of the times, and until we can get our own ready. Never did so great an object present itself to the acceptance of a nation. We own the country from sea to sea—from the Atlantic to the Pacific—and upon a breadth equal to the length of the Mississippi—and embraciug the whole temperate zone. Three thousand miles across, and half that breadth, is the magnificent parallelogram of our domain. We can run a national central road, through and through, the whole distance, under our flag and under our laws. Military reasons require us to make it: for troops and munitions must go there. Political reasons require us to make it: it will be a chain of union between the Atlantic and Mississippi States. Commercial reasons demand it from us: and here I touch a boundless field, dazzling and bewildering the imagination from its vastness and importance. The trade of the Pacific Ocean, of the western coast of North America, and of eastern Asia, will all take its track; and not only for ourselves, but for posterity. That trade of India which has been shifting its channels from the time of the Phœnicians to the present, is destined to shift once more, and to realize the grand idea of Columbus. The American road to India will also become the European track to that region. The European merchant, as well as the American, will fly across our continent on a straight line to China. The rich commerce of Asia will flow through our centre. And where has that commerce ever flowed without carrying wealth and dominion with it? Look at its ancient channels, and the cities which it raised into kingdoms, and the populations which upon its treasures became resplendent in science, learning and the arts. Tyre, Sidon, Balbec, Palmyra, Alexandria, among its ancient emporiums, attest the power of this commerce to enrich, to aggrandize, and to enlighten nations. Constantinople, in the middle ages, and in the time of the crusades, was the wonder of western Europe; and all, because she was then a thoroughfare of Asiatic commerce. Genoa and Venice, mere cities, in later time, became the match of kingdoms, and the envy of the kings, from the mere divided streams of this trade of which they became the thoroughfare.

Lisbon had her great day, and Portugal her pre-eminence during the little while that the discovery of the Cape of Good Hope put her in communication with the East. Amsterdam, the city of a little territory rescued from the sea, and the seven United Provinces, not equal in extent to one of our lesser States, became great in arms, in letters, in wealth, and in power; and all upon the East India trade. And London, what makes her the commercial mistress of the world—what makes an island no larger than one of our first class States—the mistress of possessions in the four quarters of the globe—a match for half of Europe, and dominant in Asia? What makes all this, or contributes most to make it, but this same Asiatic trade? In no instance has it failed to carry the nation or the people which possessed it, to the highest pinnacle of wealth and power, and with it, the highest attainments of letters, arts and success. And so will it continue to be. An American road to India, through the heart of our country will revive upon its line all the wonders of which we have read—and eclipse them. The western wilderness, from the Pacific to the Mississippi will start into life under its touch. A long line of cities will grow up. Existing cities will take a new start. The state of the world calls for a new road to India, and it is our destiny to give it—the last and greatest. Let us act up to the greatness of the occasion, and show ourselves worthy of the extraordinary circumstances in which we are placed, by securing, while we can, an American road to India—central and national—for ourselves and our posterity—now, and hereafter, for thousands of years to come.

I now ask leave to introduce the bill.

Leave having been granted, Mr. Benton introduced his bill; which was read twice, and referred to the Committee on Military Affairs.

It is as follows:

A Bill to provide for the location and construction of a central national road from the Pacific ocean to the Mississippi river, with a branch of said road to the Columbia river.

Be it enacted, &c, That seventy-five per centum of the proceeds of the public lands in Oregon and California, and fifty per centum of the amount of the sales of all other public lands in the United States, shall be, and the same hereby are, set apart and pledged to defray the expenses of locating and constructing a central national road from the Pacific ocean to the Mississippi river, with a branch of said road to the Columbia river.

Sec. 2. *And be it further enacted*, That the said central national road shall commence on the Bay of San Francisco, at a suitable point to connect with the ocean navigation of the Pacific, and terminate at St. Louis, in the State of Missouri. And the said branch road shall commence on the tide-water region of the Columbia river, to connect with ocean navigation at that point, and shall intersect the central national road at some suitable point west of the Rocky mountains.

Sec. 3. *And be it further enacted*, That the said central and branch roads shall be iron railways where practicable and advantageous, and shall be macadamized, or otherwise constructed, where not so practicable and advantageous; and a breadth of one mile wide from the frontier of the State of Missouri to the Bay of San Francisco, shall be, and the same hereby is, reserved and appropriated forever for the track of said central road, and for the tracks of such other roads (railway or others,) as may hereafter be authorised by act of Congress; and a breadth

of one thousand feet shall be, and the same hereby is, reserved for the branch road to the tide-water region of the Columbia.

SEC. 4. *And be it further enacted,* That the President of the United States be, and he hereby is, authorized and requested to cause all the information in the possession or power of the government, necessary to show the comparative advantages and disadvantages of different routes for said central and branch routes, to be laid before Congress for its decision, with topographical and profile maps to illustrate the same; and to cause further explorations to be made, if necessary; and the sum of thirty thousand dollars, out of any moneys in the treasury not otherwise appropriated, be, and the same hereby is, appropriated to enable the President to carry the objects of this section into effect.

SEC. 5. *And be it further enacted,* That as soon as the routes for said central and branch road, or either of them, shall be selected, the location or construction thereof shall be commenced under the direction of the President of the United States, and continued till finished, by virtue of appropriations to be made by Congress out of the fund created and set apart by this act for that purpose.

SEC. 6. *And be it further enacted,* That military stations shall be established on the line of the said central and branch roads, for their protection and support; and settlements shall be encouraged at such stations by making donations of land to actual settlers.

SEC. 7. *And be it further enacted,* That so soon as said railway, or any sufficient part thereof, shall be completed and fit for use, the use thereof shall be granted for a limited time to such individuals or companies as shall, by contract with the government of the United States, agree to transport persons, mails, munitions of war, and freight of all kinds, public and private, in vehicles furnished by themselves over the same, at such reasonable rates as shall be agreed upon: *Provided,* That if other roads shall hereafter be constructed on the ground reserved for roads by this act, the same company or persons shall not be allowed to have the contract for transportation, or any interest in more than one road at the same time. *And provided, further,* That a margin of said reserved ground, both over the said central and branch road, of at least one hundred feet wide, shall be forever reserved for a common road for wheel carriages, horse and foot travelers, free from toll or charge.

SEC. 8. *And be it further enacted,* That the sum of one hundred thousand dollars be, and the same is hereby, appropriated to enable the President to treat with the Indian tribes along the line of said road, when the route thereof shall be resolved upon, for so much territory as shall be necessary for the purposes of this act.

COMMERCIAL STATISTICS.

STATISTICAL ASSOCIATIONS.

THERE is perhaps no other country in which an organized system of collecting and preserving statistics, is of so much importance as in the Valley of the Mississippi; for, owing to the annual extension of the area of settlement and civilization in the west—the rapid increase of population—the growth of towns and cities, and the progress of agriculture, manufactures, commerce, and navigation—the statistics of one year are far from indicating the true state of things for the year immediately following. The present condition of Europe affords another strong argument to incite the people of this country to the collection and publication of such facts as are calculated to make the resources of the Valley of the Mississippi known to foreign capitalists. The spirit of emigration is bringing to the United States a vast amount of labor, and it is highly important that a corresponding

amount of capital should come with this labor, to put it in operation, and afford for it profitable employment. Capitalists are timid and cautious in their movements, and rarely go in search of objects of investment; and hence whenever foreign capitalists come to the United States they stop in the Atlantic cities, and only serve to increase the money power of the east, and thereby weaken the relative commercial power of the west. Could foreign capitalists be made acquainted with the extent and variety of the resources of this Valley, it cannot be doubted but that many would be induced to come here, more especially at the present time when so large a number of the laborers of their own country are settling in this region.

Impressed with the importance of this subject, we called the attention of our agricultural readers to it about a year ago, and endeavored by the use of argument to stir them up to the formation of agricultural associations, which, among other objects should combine that of collecting all useful facts relating to their several districts; but we regret that from that day to the present time, we have not been advised of the formation of a single agricultural society in Missouri. We have also written many letters addressed to individuals, requesting them to furnish us with the general statistics of their towns and neighborhoods, embracing the subjects of commerce, manufactures, mining, horticulture, &c. A few only of these individuals have furnished us with the desired information; others have made excuses for not doing so, and a large portion have not even acknowledged the receipt of our communications. And although we feel some degree of humiliation arising from the little impression that we have been able to make upon our readers, we have however resolved to address the business portion of the community of St. Louis, and to urge upon them the consideration of forming a statistical society in this city. It will require no argument to convince the merchants, at least, of the importance of correct information respecting the agriculture and manufactures, as well as of the commerce of the country; and we must be allowed to say that one who is ignorant on these subjects, is not entitled to the honorable appellation of *merchant*, nor is he worthy to be trusted as such; he may be a sordid huckster, and thrive by the art of 'jewing,' but it is an abuse of language to call him a merchant. While it may be safely affirmed that a very large portion of those who aim to act upon the liberal and enlarged principles that constitute the merchant, fail from a want of correct knowledge of the facts which relate to their business. Our experience has taught us that commercial statistics should, in general, be received with great caution. Editors of commercial papers cannot attend in person to the collection of statistics. Nor can they always attend to the details of comparing and arranging them; and relying, as they must, on the fidelity of agents, they are continually in danger of falling into errors. An occurrence which has recently happened, in our own case, will prove how little reliance is to be placed in the published statistics of St. Louis. We have hitherto relied mainly upon the papers of the city for our commercial facts; and supposing that they were sufficiently accurate for all practical purposes, and knowing of no means of testing their truth, we have scrutinized them less, perhaps, than it was our duty to have done.

Recently, however, we were kindly admonished of our errors, by one of the leading journals of the city, which intimated that we had collected our statistics

from a wrong source. Being anxious to discover wherein we had erred, we undertook to compare our tables with the annual statement of the commerce of St. Louis, for the year 1848, as published by our neighbors who had given us this friendly intimation, when, to our deep mortification, we discovered many important discrepancies, and instantly resolved to enter upon the labor of correction, let it cost what it might; for we had no desire either to conceal or defend our mistakes. At a loss where to commence our search for the truth, it ocurred to us to compare this annual statement of our cotemporaries with the semi-weekly reports of the St. Louis market, which were to be found in the files of the same paper for the year 1848; and selecting, at random, the prices of hemp for the months of July and August, we turned to their file, and were not greatly surprised to find that the discrepetancy was about as great between their annual statement and semi-weekly report, as between them and our own tables In the annual statement of the prices of hemp for the month of July, 1848, the article is set down as ranging from $80 to $83 per ton. We examined carefully the actual sales in seven semi-weekly reports made during that month, and found that the prices there ranged from $75 to $101, and eight bales of hackled at $102 50 per ton; the sales amounted to 4,360 bales—and 2,629 of these sold above the maximum of $83; 1,138 bales above $90 per ton, and 638 bales at and above $100 per ton, and only 851 bales sold under $83 per ton; 128 were sold at private terms. We compared, likewise, the prices of hemp for the month of August; and, although the discrepancy is not quite so great as in July, yet it will be seen, from the following facts, that the annual statement differs widely from the semi-weekly reports of the market. The price of hemp is stated in the annual report, for this month, as ranging from $95 to $98 per ton. We find, by examining six semi-weekly reports in August, the sale of 3,396 bales: of these, 131 sold at $98; 1,858 bales at $98 to $100; 493 bales at $95 to $100; and 838 bales at $100 per ton. We then examined the annual statement of the price of corn for the month of August, 1848, and found this article reported as ranging from 38 to 40 cents per bushel; and, upon turning to the semi-weekly reports, we discovered that the highest sale noticed in seven semi-weekly reports is set down at 33¼ cents, the prices ranging from 24 to 33¼ cents—showing a difference of at least 25 per cent. between the annual statement and the semi-weekly reports. We compared, also, the prices of tobacco for August; but, as the annual statement gives the price of prime shipping qualities only, without noticing the lower and higher qualities, we are compelled to leave the readers of this annual statement to discover, as they best can, what portion of the crop of Missouri is included within the denomination of "prime shipping qualities;". as also the prices of the inferior qualities—which, we imagine, constitute a large portion of the tobacco crop of the State.

We proceeded no farther with our comparison of tables; for, utterly disparing of correcting our own, we felt no inclination to expose the errors of others.

We have simply noticed these facts, in connection with the subject of a statistical association, as evidence of the importance of such an institution. We are convinced that individual enterprise is totally inadequate to the task of collecting and arranging the statistics of our city, so as to make them useful to the man of business—to the legislator, or historian; and, therefore, we desire to see some of our influential citizens come forward, with a plan calculated to remedy the evil of which we complain.

COINAGE OF THE UNITED STATES.

In connection with the leading article of the present number, we have appropriated a large space to the coinage of the United States. The tables, with the remarks which precede them, are taken from the Merchants' Magazine, for February, 1849, and the source from which they were obtained by the editor of that Journal, entitles them to the fullest degree of credit.—[Editors.

Prior to the year 1835, there existed but one institution, the parent Mint, which commenced operations in 1793, and is established in the city of Philadelphia. It occupies a spacious and elegant edifice of white marble fronting upon Chesnut street, and provided with all the delicate machinery and other appliances required for assaying, melting, refining, and the proper coinage of the precious metals. During that year three branches of the parent Mint were created by act of Congress. Two of these were located in the centre of the gold mining region, the one in the town of Charlotte, North Carolina, and the other at Dahlonega, within the State of Georgia, both being exclusively confined to the coinage of gold. The other was established in New Orleans for the coinage of gold and silver. During the year 1838 those branches went into operation, their coinage being uniform with that of the parent Mint, and is tested at this institution. Each of the branches is under the management of superintendents, whose official duties pass under the general supervision of the parent establishment in Philadelphia. We subjoin a corrected statement of the amount of coinage at the Mint of the United States, in the several denominations of coin, from the commencement of its operations, until the 31st of December, 1847, inclusive :*

Amount of Coinage at the Mint of the United States, in the several denominations of coin, from the commencement of its operations until December 31; 1847, *inclusive.*

GOLD COINAGE.

Years.	Eagles. Pieces.	Half Eagles. Pieces.	Quarter eagles. Pieces.	Total gold coinage. Number. Pieces.	Value. Dolls.	Cents.
1793, 1794, 1795,	2,795	8,707		11,502	71,485	00
1796,	6,934	6,196	963	14,093	102,727	50
1797,	8,323	3,609	859	12,791	103,422	50
1798,	7,974	24,867	614	33,455	205,610	00
1799,	17,583	7,451	480	25,414	213,285	00
1800,	25,965	11,622		37,587	317,760	00
1801,	29,254	26,006		55,260	422,570	00
1802,	15,090	53,176	2,612	70,878	423,310	00

*For this corrected table we are indebted to the politeness of R. M. Patterson, Esq., the son of the able and efficient Director of the Institution, and to the Manual of Coinage, issued by the Assayers of the Mint of the United States.

GOLD COINAGE—CONTINUED.

Years.	Eagles. Pieces.	Half Eagles. Pieces.	Quarter eagles. Pieces.	Total gold coinage. Number. Pieces.	Value. Dolls.	Cents.
1803,	8,979	33,506	423	42,908	258,377	50
1804,	9,795	30,475	3,327	43,597	258,642	50
1805,		33,183	1,781	34,964	170,367	50
1806,		64,093	1,616	65,709	324,505	00
1807,		84,093	6,812	90,905	437,495	00
1808,		55,578	2,710	58,288	284,665	00
1809,		33,875		33,875	169,375	00
1810,		100,287		100,287	501,435	00
1811,		99,581		99,581	497,905	00
1812,		58,087		58,087	290,485	09
1813,		95,428		95,428	477,140	00
1814,		15,454		15,454	77,270	00
1815,		635		635	3,175	00
1816,						
1817,						
1818,		48,588		48,588	242,940	00
1819,		51,723		51,723	258,615	00
1820,		263,806		263,806	1319,030	00
1821,		34,641	6,448	41,089	189,325	00
1822,		17,796		17,796	88,980	00
1823,		14,485		14,485	72,425	00
1824,		17,340	2,600	19,940	93,200	00
1825,		29,060	4,434	33,494	156,385	00
1826,		1[illegible],069	760	18,829	92,245	00
1827,		24,913	2,800	27,713	131,565	00
1828,		28,029		38,029	140,145	00
1829,		57,442	3,403	60,845	295,717	50
1830,		126,251	4,540	130,891	643,105	00
1831,		140,594	4,520	145,114	714,270	00
1832,		157,487	4,400	161,887	798,435	00
1833,		193,630	4,160	197,790	978,550	00
1834,		732,169	117,370	849,539	3,954,270	00
1835,		371,534	131,402	502,939	2,186,175	00
1836,		553,147	547,986	1,101,133	4,135,700	00
1837,		207,121	45,080	252,201	1,148,305	00
1838,	7,200	286,588	47,030	340,818	1,622,515	00
1839,	28,248	118,143	27,021	183,412	1,040,747	50
1840,	47,338	137,382	18,859	203,579	1,207,437	50
1841,	63,131	15,883		78,964	710,475	00
1842,	81,507	27,578	2,823	111,908	960,017	00
1843,	75,462	611,205	100,546	787,213	4,062,010	00
1844,	6,361	340,370	6,784	353,515	1,782,420	00
1845,	26,153	417,099	91,051	534,303	2,574,652	50
1846,	20,095	395,942	21,598	437,635	2,234,655	00
1847,	862,264	919,781	29,814	1,811,859	13,296,080	00
Total,	1,360,351	7,203,755	1,247,626	9,811,732	52,741,350	00

SILVER COINAGE.

Years.	Dollars. Pieces.	Hf dollars. Pieces.	Quarter dollars. Pieces.	Dimes. Pieces.	Hf dimes. Pieces.	Total silver coinage. Number. Pieces.	Value. Dlls.	Cts.
1793.... 1794.... 1795....	204791	323144	....	....	....	614351	370683	80
1796.....	72920	3919	5894	22135	10230	115097	79077	50
1797.....	17776	....	252	25261	44527	77816	12591	43
1798.....	337536	....	....	27550	....	355086	330291	00
1799.....	423515	....	....	....	....	423515	423515	00
1800.....	220920	....	....	21760	24000	266680	224296	00
1801.....	54454	30289	....	34640	33910	153293	74750	00
1802.....	41650	29890	....	10975	13010	95525	58343	00
1803.....	66064	31715	....	33040	37850	168669	87118	00
1804.	19570	156519	6738	8265	....	191092	100340	50
1805.....	301	211722	121394	120780	15600	469817	149388	50
1806.....	....	839576	206124	....	....	1045700	471319	00
1807.....	....	1051576	220643	165000	....	1437219	597448	75
1808.....	....	1368600	....	....	....	1368600	684300	00
1809.....	....	1405810	....	44710	....	1450520	707376	00
1810.....	....	1276276	....	6355	....	1282631	638773	50
1811.....	....	1203644	....	65180	....	1268824	608340	00
1812.....	....	1628059	....	....	....	1628059	814029	50
1813.....	....	1241903	....	....	....	1241903	620951	50
1814.....	....	1039075	....	421500	....	1460575	561687	50
1815.....	....	....	69232	....	....	69232	17308	00
1816.....	....	47150	20003	....	....	67153	28575	75
1817.....	....	1215567	....	....	....	1215567	607783	50
1818.....	....	1960322	361174	....	....	2321496	1070454	50
1819.....	....	2208000	144000	....	....	2352000	1140000	00
1820.....	....	751122	127444	942587	....	1821153	501680	70
1821.....	....	1305797	216851	1186512	....	2709160	825762	45
1822.....	....	1559573	64080	100000	....	1723653	805806	50
1823.....	....	1694200	17800	440000	....	2152000	895550	00
1824.....	....	3504951	....	....	....	3504951	1752477	00
1825.....	...	2943166	168000	510000	....	3621166	1564583	00
1826.....	....	4004180	....	....	....	4004180	2002090	00
1827.....	....	5493400	4000	1215000	....	6712400	2869200	00
1828.....	....	3075200	102000	125000	....	3302200	1575600	00
1829.....	....	3712156	....	770000	1230000	5712156	1994578	00
1830.....	....	4764800	....	510000	1240000	6514800	2495400	00
1831.....	....	5873600	398000	771350	1242700	8285710	3175600	00
1832.....	....	4797000	320000	522500	965000	6604500	2579000	00
1833.....	....	5206000	156000	485000	1370000	7217000	2759000	00
1834.....	....	6412004	286000	635000	1480000	8813004	3415002	00
1835.....	....	5352006	1953000	1410000	2760000	11474006	3443003	00
1836.....	1000	6546200	472000	1190000	1900000	10109200	3606100	00
1837.....	....	3629820	252400	1012000	2276000	7200220	2096010	00
1838.....	....	3546000	832000	1992500	2255000	8625500	2293000	00
1839.....	300	3334561	491146	1053115	1069150	5948272	1949136	00
1840.....	61005	1435008	188127	1358580	1344085	4386805	1028603	00
1841.....	173000	310000	120000	1622500	1150000	3375500	577750	00
1842.....	184618	2012764	88000	1887500	815000	4987882	1442500	00
1843.....	165100	3844000	645600	1370000	1165000	7189700	2443750	00
1844	20000	1766000	421200	72500	430000	2709700	1037050	00
1845.....	24500	589000	922000	1755000	1564000	4854500	803200	00
1846.....	110600	2210000	510000	31300	27000	2888900	1347580	00
1847	140750	1156000	734000	245000	1274000	3549750	990450	00
Total....	2320390	108101326	10641102	24250095	25522478	171138391	62748211	90

Total amount of copper coined at the Mint of the United States, from 1793 to 1847, inclusive, is $1,145,591 21. The quantity of copper coined, varies very much in different years; the largest quantity coined in any one year, say in 1838, was $63,702; in 1841, was coined only $15,973 62; in 1847, it again increased to $61,836 69.

TOTAL COINAGE OF THE UNITED STATES.

Years.	Value. Dolls. Cts.	Years.	Value. Dolls. Cts.
1793, 1794, 1795,	453,541 80	1822,	915,509 89
1796,	192,129 40	1823,	967,975 00
1797,	125,524 29	1824,	1,859,297 00
1798,	545,698 00	1825,	1,735,894 00
1799,	645,906 68	1826,	2,110,679 25
1800,	571,335 40	1827,	3,024,342 32
1801,	510,956 37	1828,	1,741,381 24
1802,	516,075 83	1829,	2,306,875 50
1803,	370,698 53	1830,	3,155,620 00
1804,	371,827 94	1831,	3,923,473 60
1805,	333,239 48	1832,	3,401,055 09
1806,	801,084 00	1833,	3,765,710 00
1807,	1,044,595 96	1834,	7,388,423 00
1808,	982,055 00	1835,	5,668,667 00
1809,	884,752 53	1836,	7,764,900 00
1810,	1,155,868 50	1837,	3,299,898 00
1811,	1,108,740 95	1838,	3,979,217 00
1812,	1,115,219 50	1839,	3,021,170 11
1813,	1,102,271 50	1840,	2,260,667 50
1814,	642,435 80	1841,	1,304,198 67
1815,	20,483 00	1842,	2,426,351 50
1816,	56,785 57	1843,	6,530,043 20
1817,	647,267 50	1844,	2,843,447 52
1818,	1,345,064 50	1845,	3,416,800 54
1819,	1,425,325 00	1846,	3,623,443 00
1820,	1,864,786 20	1847,	14,348,366 69
1821,	1,018,977 45	Total,	116,635,153 11

By an act of Congress of February, 1793, all foreign gold and silver coins, (except Spanish milled dollars, and parts of dollars,) which were received for moneys due to the United States, were required to be coined anew previous to their circulation; and under this act the amount received at the Philadelphia Mint, during the year 1847, was $9,829,404.

Since all value is regulated by the standard of gold and silver, it may be proper to exhibit a few general facts respecting their production in different parts of the globe. It appears that for three centuries the greater part of the gold and silver, which was used by civilized nations was drawn from America—Mexico and Peru yielding the largest amount of silver, and New Granada, Brazil, and Chili the largest amount of gold. The production of the precious metals in Mexico and South America, during the last thirty years, has decreased, in consequence, probably, of the revolutions which have convulsed those countries; while within that period the amount produced in the United States has been greatly increased. The quantity produced in Europe and Asia has been vastly augmented since the commencement of the present century. The largest supply of gold, exceeding in amount that which is furnished from all other parts of the globe, is obtained from the Russian dominions—the ranges of the Ural and Altain mountains containing vast depositories of the precious metals. The total

amount of the production of gold in America, from its discovery to January, 1846, is estimated at $6,810,290,000. Recent discoveries seem, moreover, to have developed extensive mines in the territory of California. By the official report of the Director of the Mint, it appears that the total amount of gold from the mines of the United States, which has been deposited for coinage in this institution, is $12,741,653. We subjoin the following statement of the annual amount of deposits of gold at the Mint of the United States and its branches, from mines in the United States, down to the present period:—

Statement of the annual amounts of Deposits of Gold, for coinage, at the Mint of the United States and its branches, from mines in the United States.

DEPOSITED AT THE UNITED STATES MINT.

Years.	Virginia.	North Carolina.	South Carolina.	Georgia.	Tenn.	Ala.	Various sources.	Total at the United States Mint.
1824,	....	$5000	....	....	....	....	....	$5000
1825,	....	17000	....	....	....	....	....	17000
1826,	....	20000	....	....	....	....	....	20000
1827,	....	21000	....	....	....	....	....	21000
1828,	....	46000	....	....	....	....	....	46000
1829,	2500	134000	3500	....	....	....	....	140000
1830,	24000	204000	26000	212000	....	....	....	466000
1831,	26000	294000	22000	176000	1000	....	1000	520000
1832,	34000	458000	45000	140000	1000	....	....	678000
1833,	104000	475000	66000	216000	7000	....	....	868000
1834,	62000	380000	38000	415000	3000	....	....	898000
1835,	60400	263500	42400	319900	100	....	12000	698500
1836,	62000	148100	55200	201400	300	....	....	467000
1837,	52100	116900	29400	83600	....	....	....	282000
1838,	55000	66000	13000	36000	1500	....	200	171700
1839,	57600	53500	6300	20300	300	500	....	138500
1840,	38995	36804	5319	91113	104	4431	....	176766
1841,	25736	76431	3440	139796	1212	1863	....	248478
1842,	42163	61629	223	150276	....	5579	13717	273587
1843,	48148	62873	5099	56619	2788	3786	415	180728
1844,	40595	194917	11856	30739	2240	12298	2377	295022
1845,	86783	365886	5286	17325	3202	6472	4328	489382
1846,	55538	286105	100641	13601	2642	7542	....	466069
1847,	67736	99491	1102	10547	2511	2022	....	183409
Total,	$915294	3886136	479866	2330246	28899	45492	34237	7750141

DEPOSITED AT THE BRANCH MINTS.

Years.	Branch mint at Charlotte, North Carolina.	Branch mint at Dahlonega, Georgia.	Branch mint at New Orleans.	Total at the branch mints.	Total deposits of U. States gold.
1838,	$127,000	$135,700	$700	$263,400	$435,100
1839,	126,836	113,035	6,869	246,740	385,240
1840,	124,726	121,858	3,835	249,419	526,185
1841,	129,847	161,974	1,818	293,639	542,117
1842,	174,508	323,372	5,630	503,510	777,097
1843,	272,064	570,080	22,573	864,717	1,045,445
1844,	167,348	479,794	25,036	672,178	967,200
1845,		498,632	20,313	518,945	1,008,337
1846,	196,381	455,149	21,758	673,288	1,139,357
1847,	344,054	352,366	9,256	705,676	889,085
Total,	$1,662,764	3,211,960	116,788	4,991,512	12,741,653

COINAGE AT THE BRITISH MINT.

The following table, exhibiting the coinage of the British Mint for eleven years, is credited by the Merchants' Magazine to the "Companion to the British Almanac for 1849," an authority which the editor says can be relied upon.

STATEMENT OF THE VALUE ARISING FROM THE COINAGE DURING THE ELEVEN YEARS FROM 1837 TO 1847.

Years.	TOTAL WEIGHT COINED IN EACH YEAR. Gold. lbs.	Silver. lbs.	Copper. tons. cwts.	TOTAL VALUE COINED IN EACH YEAR. Gold.	Silver.	Copper.
1837 - -	26,818	23,064	22 15	£1,253,071	£76,111	£5,096
1838 - -	61,110	60,960	7 00	2,855,364	101,168	1,568
1839 - -	10,793	120,980	32 00	504,303	399,235	7,168
1840 - -		65,580	14 00		216,414	3,136
1841 - -	8,100	29,144	33 00	378,472	96,175	7,392
1842 - -	127,919	58,440	8 00	5,977,015	204,732	1,792
1843 - -	141,420	83,720	68 10	6,607,850	276,276	15,344
1844 - -	76,275	189,900	36 17	3,563,949	626,670	8,207
1845 - -	90,842	196,260	31 00	4,244,506	647,658	6,944
1846 - -	92,775	196,560	29 00	4,334,697	559,548	6,496
1847 - -	110,400	38,100	40 00	5,158,440	125,730	4,960
Total, -	746,452	1,062,708	322 2	29,886,457	2,440,614	43,743
Tons, - -	373	531¼	322 2	Total value, - -		£38,275,486

The following table, showing the average yearly coinage of the principal governments in Europe and America, is taken from the Manual of Coins, a book published by Eckfeldt and Dubois, in 1842. We are not advised by the authors of the length of time embraced in this average; they say it is the average amount of gold and silver coined "of late years,"—a very indefinite expression. It will be observed that the amount set down for Great Britain is much less than the average of the eleven years, as shown by the foregoing table.

United States,	$4,300,000	Mexico,	$12,000,000
Great Britain and Ireland,	7,300,000	Bolivia,	1,500,000
France,	25,600,000	Peru,	3,000,000
Prussia,	1,800,000	Sweden,	690,000
Austria,	6,000,000	Denmark,	128,000
Spain,	400,000	Colombia,	2,000,000
British East Indies,	13,300,000	Brazil,	60,000
Saxony,	340,000		
		Total,	$74,098,000

BRITISH COIN AND BULLION STATISTICS.

Amongst the British Parliamentary returns, one relating to the export of bullion from the United Kingdom is very interesting. From this document, prepared by the Inspector General of imports and exports at the custom house, the following appears to have been the aggregate exports of coin and bullion from the United Kingdom for the years undermentioned:

Years.	GOLD. British. Oz.	Foreign. Oz.	Total. Oz.	SILVER. British. Oz.	Foreign. Oz.	Total. Oz.
1837,	166,485	34,996	201,481	285,920	13,354,084	13,640,004
1838,	375,548	105,883	481,431	464,918	12,894,904	13,359,822
1839,	251,696	405,626	657,322	779,257	13,021,226	13,800,483
1840,	57,700	316,871	374,571	471,869	15,496,408	15,968,277
1841,	17,952	13,683	31,635	502,243	14,812,180	15,354,423
1842,	107,829	9,363	117,192	149,832	13,832,956	13,982,788
1843,	564,509	28,296	592,805	553,586	11,809,408	12,362,994
1844,	23,979	40,209	64,188	325,721	13,403,310	13,729,031
1845,	11,928	46,643	58,371	429,458	14,439,174	15,368,632
1846,	99,529	38,878	138,305	237,209	9,380,419	9,617,628
1847,	1,005.651	236,896	1,242,637	952,955	14,320,824	15,273,779

Of the 1,242,637 ounces of gold, and 15,273,779 ounces of silver thus shown to have been exported in 1847, it appears that 1,005,651 of the gold, and 952,955 of the silver was in the coinage of this country, the remainder being foreign. While, however, nearly all the gold exported was British, the silver was almost exclusively foreign, the proportions being as follows:

	Gold—Oz.	*Silver—Oz.*
British coinage, - - -	1,005,651	952,955
Foreign coin and bullion, -	236,986	14,320,824
Total exported, -	1,242,637	15,273,779

On an analysis of the account, the total amount of specie exported appears to have been shipped to foreign countries in the following proportion:

	Gold—Oz.	Silver—Oz.		Gold—Oz.	Silver—Oz.
United States,	838.029		Brit. N. America,	6,569	201,108
France,	43,341	9,252,115	Brit. W. Indies,	7,293	560,872
Hanseatic towns,	33,954	3,312,233	Cuba,	74,879	
Holland, -	23,112	630,429	Other countries,	63,596	465,491
Belgium,	47,400	430,086			
Portugal,	93,502	144,342	Total exports,	1,242,637	15,273,779
Cape of Good Hope,	10,662	277,093			

Valuing the above amounts at the mint price of gold and the average price of silver, it would appear that the bullion exported exceeded £10,000,000 sterling, of which sum about half was gold and the remainder silver. From this amount, however, in order to ascertain the nett sum exported, the value of the specie imported must be deducted, but the custom house returns do not afford any information on the point. The Bank of England returns show that the highest amount of gold and silver held during the year 1847, by that establishment, was £14,951,575 on the 2d Jannary; and the lowest amount £8,312,-691 on the 23d October; the difference being £6,638,881. This may afford sufficiently correct data to estimate the actual amount of specie exported over the amount received.

Increase of Gold and its effects on Values.—The Liverpool Journal says that the annual addition to the British stock of gold, made by mines is about £12,000,000, of which Russia and South America con-

tribute each £5,000,000. The Russian mines have been worked about twelve years, and have enlarged our stock of gold by £60,000,000, without having produced the least effect in price. The effect of the discovery of gold in California, it thinks, will be to close many of the South American works, and this may extend even to Russia, so that the average aggregate supply will be less than is generally supposed, and as the stock in existence is estimated at £800,000,000, the addition of even £26,000,000 annually, could not greatly interfere with its value.—[*Cincinnati Gazette.*

STATE OF THE BANK OF THE STATE OF MISSOURI, ON THE 31ST OF OCTOBER, 1848.

RESOURCES.

Branch at Fayette, for capital,	$120,058 84	
" Palmyra, "	120,058 84	
" Jackson, "	120,058 84	
" Springfield, "	120,058 84	
" Lexington, "	120,058 84	
		$600,294 24
Bills discounted,		855,010 82
Exchanges matured,		295,950 29
Exchanges maturing,		276,738 70
Real Estate,		59,318 29
State of Missouri, (for interest paid,)		10,206 89
Loan to State of Missouri, (to pay volunteers,)		4,276 93
Bills receivable, (real estate sold,)		51,219 66
Suspended debt,		102,965 25
Expense account,		5,297 55
Protest account,		24 42
Due from Banks,		25,664 96
Certificates Banks of Illinois,		192,013 33
Warrants on State Treasurer of Missouri,		4,753 35
Gold and silver coin on hand,		1,763,360 85
		$4,338,955 49

LIABILITIES.

Capital stock paid in:		
Owned by the State,	$954,205 22	
Owned by individuals,	253,962 37	
		$1,208,167 59
Due depositors,		1,433,341 24
Unclaimed dividends,		1,804 52
Interest and exchange,		132,906 70
Contingent fund,		122,959 96

Suspense account,	17,222 20
Circulation,	1,278,900 00
Due to banks,	143,653 28
	$4,338,955 49

H. SHURLDS, *Cashier.*

St. Louis, October 31st, 1848.

WESTERN TOWNS.

LEXINGTON, MISSOURI.

The Lexington Weekly Express, of January 9th, gives the following account of the improvements and business of that place in 1848:

The population of the city and its immediate suburbs, according to the census recently taken, is between 2,400 and 2,500. The population of Lafayette county is 10,979. That of Ray county, bounding Lafayette on the north, 9,886; Johnson, on the south, 6,435; Saline, on the east, 6,953, and Jackson, on the west, about 12,000. The city is in the heart, or centre, of the richest body of land in the State.

The improvements of last year we find, by count, to be as follows: One steam flouring mill, two pair of burrs, erected by H. Smith; one steam flour and grist mill, one pair of burrs, by W. A. Masterson; one steam saw mill, by G. Wood & Co., now owned by T. Hinkle & Co.; one steam rope walk, by C. M'Grew, 430 by 30 feet, engine fifteen horse power, runs twenty-one spindles, and gives employment to thirty hands—cost between $4,000 and $5,000; one steam distillery, by W. W. Waddell; twenty-one brick residences; seven frame residences; one three story brick business house; two brick shops; three brick churches, Episcopal, Cumberland Presbyterian, and 2d Christian Reformers; and numerous additions to former buildings, besides out houses, frame and log shops, &c. The whole number of tenements, stores and shops, now in Lexington, would count between four and five hundred.

During the last twelve months, from 1,000 to 1,200 tons of hemp were baled and shipped from this port; 4,500 coils of bale rope; 800 hogsheads of bacon; between 2,000 and 3,000 barrels of lard; 25,000 bushels of wheat; 8,000 barrels flour; 600 barrels whisky; and a variety of other descriptions of produce, such as dry hides, beeswax, flaxseed, hempseed, &c., the value of which was considerable.

Up to the 1st day of January instant, about 9,200 hogs were packed. Several hundred more will be packed as soon as the weather moderates. One house has packed 140 beeves for exportation. The beef business, we learn, will be carried on more extensively the next season.

The imports for 1848 amounted, in the aggregate, to $200,000.

One of the steam mills, (W. W. Waddell's,) ground 55,000 bushels of wheat during the year, and the two steam distilleries consumed a large quantity of corn, (20 or 30,000 bushels.)

Five or six brick yards, during the season, made between 7 and 8,000,000 brick. Some of these are still in kiln.

In the professions, we find 18 physicians; 4 surgeon dentists; 19 attorneys at law. There are 7 churches, (Presbyterian, Cumberland Presbyterian, Episcopal, Methodist, Baptist, First and Second Christian Reformers,) each with its pastor.

In manufactories and mills we find at this time, 3 flouring mills, 3 rope walks, 1 carding machine, 2 steam distilleries, 4 steam saw mills, 1 brewery, and 1 tobacconist.

In the mechanical pursuits, 14 shops for joiners and carpenters, 10 for blacksmiths, 6 for wagon makers, 4 for coopers, 1 for iron and steel turners, 2 stone cutters, 2 for cabinet makers, 1 for plow makers, 8 for tailors, 2 for tinners and coppersmiths, 3 for silversmiths, 5 for saddlers and harness makers, 3 plasterers, 1 for fanning mill makers, 1 for carriage makers, 1 for machinists, 2 for turners, 1 for spinning wheels, 3 for shoemakers, 4 for bakers, 5 house and sign painters, 2 printing offices, 1 book bindery. There is about twenty licensed wagoners in the city.

In the mercantile line, we find 16 dry goods houses; 4 commission storage and produce houses; 1 family grocery, 4 apothecary stores, 2 tin and stove stores, 2 cabinet ware-rooms. There are fourteen or fifteen storage houses, for hemp and other produce. There were three or four large patent hemp presses in operation last season, and others will be put up the coming spring.

In institutions of learning, we have the Masonic College, now numbering 90 students; 4 schools for boys; the Ingleside Seminary for young ladies; Mrs. Greene's school for young ladies; Miss Blackwell's school for young ladies; Mrs. Wilson's school for young ladies, and Mr. Guthrie's seminary for young ladies.

The public buildings of Lexington, now consist of the old and new court houses, the clerk's office, the Branch Bank, the Masonic College, and the county jail. The new court house, when finished will cost the county about sixteen thousand dollars, and well may the people be proud of it. It is a splendid building, and will vie with any public edifice in Missouri, for convenience and comfort. It will be completed in the course of the coming spring.

The prospects of improvement, the present year, are good. There seems to be a great certainty that many are going to California; but enough will be left to carry forward the building up of our young city. The farmer will receive liberal prices for his produce, and thus the town will be benefitted. We know of several private residences now in contemplation, and there is a strong probability that a new and large hotel will be built; a city council room and fire engine house; a Catholic church, and the wings of the Masonic College.

Nothing can prevent the improvement of this place. Its location is in the midst of the richest section of the western world, the products of the soil being immense in quantity and highly valuable. We have the genuine 'gold mines' those that never fail to yield heavy products when properly worked.

GLASGOW—ITS LOCATION, BUSINESS, POPULATION, &c., &c.

Glasgow is located in the northwestern corner of Howard county, Missouri, oa the right bank of the Missouri river. The Chariton river empties into the Missouri just above the town, which stands on a high bluff, having one of the best boat landings, for high or low water, on the river.

The town was laid out in the fall of 1836—the first sale of lots having been made that fall. It now contains a population of near seven hundred, and is increasing and improving. We have several blocks of substantial two and three story brick buildings, and preparations are being made for further improvements next season.

There is in the place eleven stores, (dry goods, grocery and drug,) four stemmeries and tobacco factories, (and four others in the immediate neighborhood,) one pork packing establishment, a hemp manufactory in the course of erection, two hotels, two printing offices, and industrious and thrifty mechanics of almost every calling. Of public buildings, there are two churches, and a third being built, an Odd Fellows' Hall and Female Seminary, of large and handsome structure.

In a business point of view, Glasgow possesses advantages inferior to no place on the Missouri river. By reference to the map, it will be seen from its location, that it must command the trade of a large scope of country, which is densely populated, and noted for its fine quality of tobacco, hemp, and other agricultural products.

The shipping from this place last season, although below an average in the article of tobacco, in consequence of a short crop, will show that we do not over-rate its advantages. We have taken some pains to collect from our business men, the amount of their shipments of some of the most important articles, which we annex:

Tobacco, 3,194 hhds., 4,531 boxes, manufactured; hemp, 2,628 bales, part hackled; bale rope, 744 coils; wheat, 36,832 bushels; bacon, 548 casks; lard, 500 barrels; pork, 305 barrels; apples, 2,980 barrels, green and 3,000 bushels dried.

The foregoing does not include all the shipments from this place, manufacturers and growers, in many instances, being their own shippers—besides, as before remarked, leading articles are only mentioned; the shipments of hides, beeswax, tallow, feathers, hemp and flaxseed, beef, butter, &c. &c., swell the amount to a very considerable extent. Freights between this place and St. Louis, average from eighteen to twenty cents.

During the boating season, there are from two to four regular packets plying between this place and St. Louis, weekly; besides the advantages of boats for ports above. There were, during the past season, over five hundred landings at our wharf. In addition to this, we have tri-weekly lines of stages east, north and west, which afford ample facilities for communication with all points.

Until within the last year, the growth, (and in consequence the business of the place,) had been much retarded, in consequence of the original proprietors of the town not being able to make clear titles to lots. The removal of this difficulty has already had a salutary effect upon the improvement of the place, and a corresponding increase of business must follow. The products of the soil, which have hitherto

been exported for manufacture, it is believed, can be manufactured here as cheap as at any other point. In fact experience has proven this, as by reference to the shipments of last year compared with this, it will be seen that there is a falling off in strips, leaf tobacco and hemp, while there is an increase of those articles in a manufactured state—and capitalists see, and are already directing their attention accordingly. The field is ample, and no place offers better facilities or holds out more flattering inducements to persons wishing to embark in the hemp, flour, slaughtering, or distilling business.—[*Glasgow Times.*

ST. LOUIS STATISTICS.

Population.—In the article on the History of St. Louis, published in our last number, we stated that the population might be fairly set down at 60,000. Since that article was written, the census taken during the past winter has been published by the Missouri Republican; from which it appears that the number of inhabitants within the city limits was 63,471. If to this the population in the suburbs be added, the number would probably reach 66,000.

Steamboats.—We stated in the February number that there had been seven steamboats built in St. Louis during the year 1848. It appears by the following table taken from the Missouri Republican, that we understated the number and amount of tonnage.

STEAMBOATS BUILT IN ST. LOUIS IN 1848.

Mustang,	128 tons.	Fayaway,	102 tons.
Edward Bates,	300	Leonora,	125
Aleck Scott,	709	A. De Lamartine,	537
Highland Mary,	159	Plough Boy,	248
Iowa,	455		
Pekin,	108	Total,	2,876

IMPORTANT INVENTIONS AND DISCOVERIES.

We have received a communication from H. Ancrum, of Ashley, Pike county, Missouri, in which he says that he has invented three several improvements in reference to railroads:

1. A cheap mode of constructing railroads on a new plan, without iron or wood for sleepers; which, besides the great annual saving of expense in repairs, possesses other advantages, and is less liable to accidents than an iron railroad. He says if an average mile of a rail road in the United States should cost $43,650, or any less sum, he can make a mile of railroad as good for $3,000 per mile; and furthermore the material used possesses the advantage of being the best and cheapest that can be used as a preparation for laying down iron rails—so that any company making the experiment could lose nothing, though they should subsequently prefer the iron.

2. An invention calculated to prevent accidents on railroads.

3. An invention by which one-third of the fuel now used can be saved, by a self-feeding boiler and reservoir that keeps the boiler al-

ways full without being dependent on the engineer for its supply—the waste being replenished as fast as it occurs in the boiler, preventing thereby all danger of explosion.

Mr. Ancrum has not intimated the nature of the material which he proposes to use in the construction of his road, nor the principle upon which it is to be operated. We are, therefore, unprepared to give any opinion respecting his invention. If he has been so fortunate as to have made such a discovery as above represented, it will be in his power not only to enrich himself, but to greatly benefit the community. If he will exhibit his plans to the examination of scientific and practical individuals there will be little difficulty we imagine in testing their utility; and we trust that he will not long withhold them from the public, if indeed they possess the merit which he supposes.

Another Discovery.—The Rev. Mr. Pepper, a Presbyterian clergyman, of Albany, New York, has invented, says the Springfield Republican, a compound of clay, called Argillo, which resembles in structure and appearance, the richest variegated agates. It is to be used for door knobs, pavements, table tops, and other ornamental articles.

It surpasses in brilliancy any known variety of marble, and it is equally cheap. The Hartford Whig speaks of it in the following terms: No one, who has not seen it, can form any idea of its beauty, and illimitable variety of color. It is so hard as to resist any scratch except of a crystal or diamond. Already Mr. Calhoun has introduced in the Senate, a resolution, which passed instantly, to the effect, that all the floors of the public offices in the capitol should be made of this beautiful material. $1,000,000 has been offered for the entire patent.

Important Invention.—Mr. David Isham, a machinist of Hartford, Conn., has recently invented a process by which cast iron can be converted, almost instantly, and with but slight expense and labor, into steel. Twenty minutes only are necessary to convert a ton of iron into steel of the best quality, a process ordinarily requiring from six to ten days. The inventor has been offered $12,000 for the patent right for the State of Pennsylvania alone. Articles manufactured from steel thus prepared, have been proved and found equal to those manufactured from the best English steel. If this invention is really what it purports to be, it will destroy one great branch of English labor, and add much to the wealth of this country.

St. Louis, March 1, 1849.

My Dear Sir:—Owing to dimness of sight, and consequent depression of spirits, I am unable to concentrate my thoughts on any subject, and will have to beg of you to do me the favor to absolve me from the duty of this month's contribution. In the next number I hope again to pay my respects to the readers of the Western Journal. With high respect, yours,

M. Tarver, Esq. ALFRED S. WAUGH.

THE

WESTERN JOURNAL.

M. TARVER and T. F. RISK, Editors and Proprietors.

VOL. II. APRIL, 1849. NO. IV.

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Clubs, composed of three individuals, will be furnished with the current volume at $7. Clubs of five, and over, $2 for each copy. The first volume will be furnished at $1 50. Postmasters, and others acting as Agents, will be allowed 75 cents for single subscribers.

THE

WESTERN JOURNAL.

VOL. II. APRIL, 1849. NO. IV.

ART. I.—WESTERN POLICY.

In all his actions, man may be regarded as proceeding on the principle of equivalents, for it is not in conformity to the economy of his nature, to live and labor without a reward; but, as a rational being, his conception and appreciation of some definite object must precede a desire for its attainment, and his exertions depend mainly upon the vividness of his conceptions, and the estimate which he places upon the attainment of the object which he has in view. With no definite attainable object in view, there can be no motives to action, except such as spring from natural instincts; and one that does not fix his mind upon the accomplishment of a certain end, is driven, by necessity, to place himself under the direction and control of others; and, although he can scarcely fail in meeting with those who, having objects of their own to accomplish, willingly undertake to direct his actions and pursuits, yet it rarely happens that this office of apparent benevolence is assumed for other than selfish purposes. It is owing to the want of some ideal object, sufficiently appreciated to excite a desire for its attainment, and well devised plans of operation, that so many individuals, in every community, become hewers of wood, and bearers of burthens for their fellow-men. Physical strength, high mental endowments, education, and even moral qualities, are of little use to the possessor, unless he resolves upon the attainment of some rational object, calculated, in its nature, to call his faculties into useful employment; and the same may likewise be predicated of communities or States. To constitute one a good citizen of a free government, he must keep in view the attainment of social or national, as well as individual, objects; for the individuals of which a community is constituted may be intelligent and enterprising; each may have selected objects worthy of pursuit; and, by plans well devised and honorable, may accomplish ends highly important to their respective interests; yet, unless there be a social or national object desired alike by all, or at least by a majority, no progress can be made, and nothing gained, to the cause of civilization. A nation, composed of individuals acting each for himself, without reference to the common welfare, could not long exist; or, if it should continue to retain the form of an organized community, it would possess no power to

protect itself against the encroachment of its more politic neighbors, and would suffer the same fate as does the individual who, living without an object, falls into the hands of others, and submits himself to their guidance.

These may be regarded as axioms in individual and political economy; but, like some of the familiar truths of morals and religion, they are but indifferently observed by a large part of the people of the west. The population of this region may be regarded as not less intelligent and enterprising than that of other portions of the Union; and we rarely meet with an individual who is not actively engaged in the pursuit of some definite object; but, unhappily, these objects are too generally selected and pursued with reference to individual interests merely. Social and national objects, if such ever existed, are obscured and lost to the view, and we have neither a State nor a National policy. The offices of the State and general government are sought with as little reference to the public welfare, as though they were situations in a counting house or manufacturing establishment; a canvass for office is a personal matter—and legislation naturally proceeds upon the same principle. In the long list of acts which are promulgated at the close of a legislative session, few are of sufficient universality to embrace the entire territory of the State; the whole volume of enactments, if well considered, will be found to bear unquestionable evidence of a tendency to the disintegration and division of the social entity. If a county desires peculiar laws and privileges, they are readily granted; and, if individuals ask exemption from the duties and observances required of the citizens at large, the legislature kindly considers the memorial, and if the prayer of the petitioner should not conflict with the individual interest of the members, they grant his request, even though he should desire to be relieved from the bonds of matrimony, and the duties of a husband and a parent.

The functions of government being thus appropriated to individual purposes, the social power loses its vitality, and ceases to subserve the purposes of its institution; and aptly considering it as defunct, a few individuals claiming as next of kin, demand a distribution of all the assets among themselves, while others, whose pedigrees are not quite so clear, contend for an equal division, "share and share alike." The same principle of individual appropriation is evinced in the conduct of the western representation in the national legislature. In the west, adhesion to certain parties stands in the place of measures; and hence, the merit of a representative is determined by the amount of service which he is capable of performing as a partizan, and having no measures of his own to support, like a soldier of fortune, he enlists under the banners of foreign belligerents. The people of the States bordering on the Atlantic perceive and understand this peculiar state of things in the west, and shape their policy with reference to the advantages which they hope to derive from it. We hear much of northern and southern measures, and the people of the west espouse the one or the other with as much zeal as though they involved the existence of their liberties; but who, for many years past, has heard of a western measure, unless the movement made in favor of freeing the western waters of snags and sandbars, may be so considered; and

even in respect to this, the west was far from being united, and the measure was made to yield, at least for a time, to party purposes.

Who so blind as not to perceive that one great object of the northern and southern parties is to propagate and extend their local and sectional prejudices across the Allegheny mountains, and thus divide the Mississippi Valley between them? a design in which they have already succeeded most effectually. What a humiliating spectacle do the people of the Valley of the Mississippi present to the world, excited and divided as they are upon issues made up between the north and the south, while their own great interests are abandoned to the control and direction of the one or the other, as either may chance to gain the ascendancy. Had the natural instincts of the western people not been stultified and mislead by prejudice, and the force of party discipline, they would never have been caught in so vile a snare.

We deprecate all parties formed upon local interests or sectional prejudices, and regard them as dangerous to the peace, if not to the safety of the Union; and hence, we have no inclination to excite prejudices in the west against any other section of our common country. But it is our most ardent desire that the people of this region should escape from the unhappy condition of being divided into northern and southern parties. This valley constitutes a well defined geographical division of the continent, more abundant in all the elements of national wealth and national greatness, than any other part of the globe of equal extent; but as great as it is in all its proportions, it is not susceptible of division—for, like the human body, all its members and appurtenances but constitute a unit, and the preservation of each particular part is necessary to the full and perfect enjoyment of the benefits which nature designed to bestow upon all. From the uttermost fountains of the east, north, and west, where the waters of the mighty Mississippi first meet the light, to the Gulf, where they mingle with the Ocean, was designed by the Creator as the home of one people—governed by the same laws—homogeneous in religion and philosophy—ordained, as we believe, for the great purpose of propagating and impressing upon the inhabitants of other regions the principles of a better civilization. Then who shall draw a line across the father of waters, and sever this great valley into northern and southern divisions—raise a barrier between the sympathies of those who happen to reside on either side, and disappoint us in the attainment of the glorious destiny which awaits us? This no human power can effect: but, if we incautiously permit others to originate our measures, and to beguile us into issues of no practical importance, and which in nowise affect our own interest, except that they serve to subject us more and more to their control, then this, and perhaps many generations, will pass away without realizing any of those pre-eminent advantages which naturally belong to our position.

Instead of engaging in the canvass of northern and southern questions, let us look around us for social and national objects, worthy of our highest exertions; these abound whithersoever we turn our vision; and we have only to choose between those which promise the largest benefits, and which are most easily attained. Let us reclaim the social functions that have been so long appropriated to individual purposes,

and having resuscitated the social compact, direct its action to its legitimate purposes; and, if we act wisely, and are true to ourselves, we shall find means sufficient for the accomplishment of every well chosen end.

We have been so long accustomed to look to the east for opinions, literature, arts, manufactures and capital, that we seem to have but little confidence in our own capacity, and even distrust the obvious advantages which surround us. The opinion which we entertain of ourselves, and of the resources of the country, or, of our probable success in any particular pursuit, are generally received from the east. Do we contemplate the encouragement of certain manufactures, we consult an eastern manufacturer who has no means of appreciating either the advantages or disadvantages of the location, and honestly believing, no doubt, that no country can rival New England in this respect, and not perceiving how he is to be benefitted by encouraging manufactures in the west, he is too cautious, and perhaps conscientious, to advise us to enter upon so hazardous an enterprise. He has long contemplated all the difficulties that attend the introduction of manufactures in a newly settled country, and he is able to enumerate them like a well conned lesson, for he counts upon these difficulties as a protection to his own business, and he would almost as soon abate an article in his creed as to admit that any of these difficulties did not exist in full force. We are told that ours is an agricultural, and that New England is a manufacturing country; that the habits of our population are formed to rural pursuits, and that they will not make efficient and reliable operatives in manufacturing establishments; and withal, that they neither possess sufficient industry, nor strength to endure constant labor; and these, and like assumptions are taken for granted by western men, and we hear them frequently repeated as established and incontrovertible facts. And in like manner our opinions in regard to every pursuit in this country, are more or less influenced by the opinions of eastern men.

In respect to the subject of literature, our condition is still more humiliating; for, if we except party politics, newspaper notices of legal and moral offences, paragraphs of personal abuse, and kindred subjects, a writer in the west would meet with little less patronage among the Camanches of the plains, than among his own countrymen. They appear to be totally incapable of comprehending how it can be that an individual residing in the same country should know anything that is not familiar to themselves; they are liberal patrons, however, of eastern literature, including "John Donkey," and all, up to the most fashionable and highly embellished monthly; and even the prudent and otherwise well-judging farmer, sends to New England for an agricultural paper, to learn him how to grow corn, tobacco, and hemp in Missouri; while he would almost suspect that one was attempting to get his money by false pretences if he were applied to for the purpose of soliciting his patronage to an agricultural paper to be published in the west.

As long as men, women and children confine their reading exclusively to eastern literature, and totally neglect their own, their tastes and habits of thinking can never conform to the condition of things

around them; and instead of sympathising with the institutions under which they live, their sympathies are with those at a great distance, whose principal aim is to monopolize the profits of western labor.

Nor do the arts and manufactures receive much better encouragement. If, however, the manufacturer should be so fortunate as to possess the means of proceeding with his business without the assistance of the community, and should be satisfied to live without its sympathy, and can afford to sell his wares for decidedly less than articles of like nature can be purchased of the merchant, he may go on and prosper; otherwise he would have little to hope for, laboring as he must, agains the prejudice in favor of eastern manufactures.

Having treated this subject with some degree of freedom, we are unwilling to leave our readers under the impression that we are so uncharitable as not to perceive, and acknowledge, that the grievances of which we complain are occasioned by the peculiar circumstances connected with the settlement of the west, rather than by a lack of intelligence or of an ordinary degree of social virtue on the part of emigrants to this region. Individuals come to the west mainly with a view of improving their pecuniary condition. Strangers in the land, and unacquainted with the policy and public men of the State, they take little interest in public measures, confiding everything of a social nature to the direction of those who have preceded them; thus circumstanced, it is natural that they should cherish their sympathies for the institutions under which they were raised, and feel a lively interest in all questions of public policy, that are calculated to affect the kindred and friends whom they have left; and hence the people of the west are generally found ready to espouse the policy and the cause of their native country, without stopping to inquire how far such policy comports with the interest of their adopted State; nor is it less natural that the parent State should look to her children for countenance and support, notwithstanding their removal to distant lands. All this is in accordance with the economy of man's nature; and we revere the source whence these sympathies flow, but we cannot commend the course of one who habitually supports the policy of his native State, without reference to the true interest of the State of his adoption. Having taken protection under its laws, and claiming all the privileges and immunities of a citizen, it is among his highest duties to study the common interest, and identify his own with the welfare of those among whom he lives.

The selfish course pursued by western politicians may, likewise, be traced to the same cause, for they, in common with others, come to the country for the purpose of improving their condition; and they seek office not because they possess more public spirit than their neighbors, but as the means of obtaining their individual objects. With such views, it would be unreasonable to expect that they could attend to their own interest, and that of the State also; especially if one should happen to conflict with the other.

We have pursued this subject beyond our original design. We set out with the purpose of suggesting to our readers, some object of more importance, in a social and national point of view, than the unprofitable issues now before the country, some of which are calculated

to produce no other fruit than evil, either in their discussion or decision; and, therefore, we desire to relieve the country from this absurd dilemma, by proposing an object more worthy of its consideration.

Congress having adjourned without acting finally upon Mr. Benton's great railway measure, time is afforded for a thorough discussion of its merits; and we hold it to be the duty of all who desire its consummation, to aid in bringing the subject fairly before the people of every part of the Union. To this end, we suggest that State Conventions be called, for the purpose of appointing delegates to a National Convention, to be held at some suitable and convenient place in the Atlantic States. The measure, though strictly national, is more likely to receive the sanction of the western than of the eastern States; and, therefore, with a view to calling out a full representation from the latter, it is advisable to make the place of meeting as convenient to them as practicable. It is not to be expected that Congress will adopt a measure of such vast importance, and one involving the expenditure of so large an amount of public money, without a general expression of public opinion in its favor. Missouri is more immediately interested in this great work than any other State; and it is the duty of her citizens to take the initiatory step towards bringing it fairly and fully before the next Congress.

The moral effect which a work of such magnitude is calculated to produce on the people of this country, will be not less important than all its other advantages combined; for there is, perhaps, nothing that tends so much to nationalize a people as great public works; their grandeur impresses itself upon the minds of the most selfish, as well as the humblest individual—socializing the thoughts and actions of the one, and elevating the other in his own estimation; each experience a pleasure which they are conscious cannot be appropriated to themselves alone, and are compelled by the laws of their nature to sympathise with the entire community; and the barriers which selfishness erects for its protection being broken down, and the individual having tasted of the inspiring fountain of social enjoyment, feels his heart and affections enlarged, and his nature dignified. His social nature thus invigorated and sustained, he perceives a glow of patriotism, perhaps for the first time, diffusing itself through his heart, and he rejoices in the discovery that there are other and higher sources of enjoyment than the pursuit or attainment of individual objects.

Some of the States of this Union have projected and accomplished works of considerable magnitude, and of great utility, not only to themselves, but to the nation at large, and of these their people are justly proud; but these achievements do not challenge the sympathies of other States, who neither assisted in devising the plan, nor contributed aught to the accomplishment of the work. For where there is no community of assent, concert in action, nor common interest, there can be no sympathy; and, indeed, the accomplishment of great works in one State, may, instead of sympathy, excite the envy and jealousy of others.

The genius of the age and the peculiar character of our institutions, demand a great national enterprise—one grand in conception, useful in its purposes, and in all respects entirely national. Such is the

scheme of a railway spanning the American continent, and opening a direct communication between Europe and Asia. Such an enterprise cannot fail to inspire every American heart with a national pride, and national sympathy; and, elevating the mind above the sectional partyism and local prejudices which have so much disturbed the national repose, it will strengthen the bonds of union; perpetuate the principles of compromise upon which it is based, and present us as a bright example worthy to be imitated by all the nations of the earth.

ART. II.—EDUCATION.—NO. III.

BY JOSEPH ORMROD, ESQ.

THE INTELLECTUAL DISCIPLINE OF SCHOOLS.

The errors and bad effects of the old system of School Discipline considered.

The subject of education is one of a nature so comprehensive, and which occupies so wide a field of enquiry, that on an occasion like the present, when writing for a periodical journal, I am under the necessity of studying brevity, and of expressing myself in terms as concise as may be in order that no important consideration may be omitted, and that I may be enabled to compress as much as possible of what relates to the subject, within limits necessarily restricted. Yet with the eager desire which I feel to accomplish something, however little, my disquisitions will, no doubt, be regarded as sufficiently ample. It is my wish to make such an exposition of my subject as may serve, in some degree at least, to awaken for it a deeper interest in the breasts of all true lovers of their species who may see these pages—to convince them of the insufficiency of our present modes of instruction, and stimulating them to aid in procuring the introduction of a better system

I would give my readers something more tangible to lay hold of, and tending more to the advancement of the cause, than is generally to be met with in the mere declamatory harangues which are so frequently indulged in when education is the topic,—for assuredly there is no subject on which so vast a quantity of breath and ink has been expended and apparently to so little purpose.

I wish not only to win the assent of my readers to the views and doctrines which I advance, but so to represent the importance and manifold advantages of a good education that they may know and feel them. This I would do if I could—if I fail, it will be from inability, and not for want of the will and endeavor to make the desired impression.

If I can in any degree succeed in my object of exposing the defects of the present system, and of exciting active attention to the adoption of a better it will be, as I apprehend, in the way I have begun, by reverting to first principles, and laying the ground work for improved methods. It is by this means only that the particular modes of discipline which I shall occasionally indicate, can be rightly appreciated, and the reason and object for which their adoption is recommended be sufficiently comprehended. An acquaintance with principles in relation to this, as to almost all other subjects, I regard as of primary importance.

Details are comparatively of insignificant value, for if we are well grounded in the former, the latter will readily present themselves. They will follow almost as a matter of course.

It is, indeed, impossible to retain in the mind a multiplicity of details, or even fully to understand their application, unless they are connected with a principle. Hence it is that, with such convictions as these, I dwell so much upon principles—upon generals, before I can, consistently with the views I entertain, approach particulars, and before I advert directly to the special means to be employed for training the youthful mind and securing an efficient school discipline.

I shall, therefore, continue to discuss the subject in the manner I have begun, and chiefly concern myself with principles, leaving their application to those who may think proper to adopt them.

Considering that the general absence of correct views and guiding principles, among parents and others, regarding what sort of discipline should prevail in the school room, has been the principle retarding cause in the advancement of education, it will be my aim, so far as I can, to disseminate that species of knowledge. For lack of this the difficulties of the teacher have often been greatly increased and multiplied; difficulties which in themselves are sufficiently formidable, even with all the sympathy and encouragement that are his due, could he always obtain them. He is dependent upon the parents or their appointed trustees for a support, and desirous therefore, of rendering his services acceptable to them ; he will in consequence rarely venture to adopt any rule or regulation in his school, or pursue any mode of discipline, which is likeiy to meet with their decided disapprobation. It is, indeed, true that the teacher himself is but too little competent, in many cases, to the proper discharge of his duties, but he requires at all times the needful countenance and support of parents and guardians, without which he can but imperfectly execute his trust, or carry out into successful operation any system of school discipline, however well qualified he may be for the task. These observations, however, are but collateral ; I must apply myself more directly to my subject. Having in the foregoing pages, taken a brief survey of the ground we should occupy in building up a system for the right education of youth, and well considered the objects which it behooves us to keep steadily in mind, my efforts will now be more particularly directed to the enquiry which regards the means to be adopted for the most effectual accomplishment of those objects. It will be unnecessary for me to enlarge upon the observations already made in relation to *physical development*—a condition in the education of youth which cannot

safely be disregarded. They comprehend as much, perhaps, as can be advantageously said on the subject; unless, indeed I were to undertake to instruct my readers in all that relates to the laws which regulate and govern our physical nature. This, were I equal to the task, would greatly transcend the limits to which I am unavoidably restricted; nor could such an exposition be regarded as properly belonging to the subject; although it is true that an intimate acquaintance with those laws would alone suffice for forcibly impressing upon the minds of all, the importance of their due observance.

It remains for me then to discuss the means best adapted to the full and perfect development of our intellectual and moral natures.

Although it is indispensable in actual training, that these two powers should be equally and simultaneously exercised, I shall find it more convenient to consider it separately; by which means I shall be enabled to do a fuller justice to both. I will first discuss the principles which relate to the intellectual discipline of schools, reserving what I have to say on the subject of moral training, for future pages, as being of too important a nature to be brought in as merely an adjunct on the present occasion. Were I, indeed, to attempt treating of both conjointly, I should certainly fail in doing justice to either.

We may now enquire in what intellectual discipline properly consists, or what are the methods best adapted to act upon the juvenile mind so as most effectually to promote that species of discipline, and give the desired exercise to the faculties. Whether the teacher will succeed lest by a resort to the customary means of merely tasking the memory of his pupil with a large amount of knowledge formally arranged, and thus *communicated* to a passive recipient, all the while relentlessly cramming his mind with the thoughts of other men; or, whether he will not accomplish the object better—so far at least as children are concerned—by disregarding systematized knowledge altogether, and applying himself directly to the faculties, by seeking to stimulate them into activity by any means that may suggest themselves to him on the instant, making use of any familiar object for the purpose, and directing their attention to things and their properties as well as to words? It is not in my estimation the amount of acquirements that we should be solicitious about, but rather the amount of thought which can be called up and brought into exercise, with but little or any regard, in the first instance, to what is usually called knowledge, whether little or much be obtained of that species commonly taught in schools.

If we rightly comprehend the nature of mind, our chief aim will be not so much to impart knowledge, so called, as to prepare the mind for its reception. This can only be done by the incitements of curiosity, in regard to such matters as the child can take an interest in; which are likely to excite enquiry in his mind, and engage his attention in such a manner as to make him in love with his studies. Acquirements in literature and science, instead of being regarded as a *means* only, are too commonly looked upon as the sole *end* and aim of all our endeavors to educate.

This is a great mistake, and one which leads to the neglect of the more important consideration of a thorough discipline for the understanding.

The ultimate objects at all times to be kept in view, are those of cultivating the faculties by exciting thought; of purifying the heart, and refining the mind of the pupil. If the intellectual attainments of our children are to be independent of these objects, then, indeed, has education been pursued without profit, and without yielding those results which good instruction is capable of producing. "Why do we wish our children to be wise and clever?" remarks a writer of the day. "Is it not because we feel that, in proportion as they exercise the faculties of thought and reason, so will their sphere of usefulness be enlarged—so will those habits and feelings be excited, which tend to happiness and virtue." If the faculties of children have been sufficiently exercised, knowledge will be easily obtained; it will, indeed, be sought after voluntarily by the pupil himself, and that which he acquires will not merely rest upon his memory, but become a part of his ordinary associations. The mind of the pupil, it is true, must have materials on which to act; he must be supplied with a multiplicity of ideas, to furnish reflection and give exercise to his understanding.

He must be informed of actualities—of what exists—and be made to comprehend cause and effect in relation to many things with which he is familiar; and, when his understanding is thus exercised, it signifies but little what may be the kind of knowledge employed for the purpose.

With these views, and for the benefit of those who have not reflected on the subject, or reflected but little, it will be expedient for me, before proceeding further with my strictures on what relates directly to mental discipline, to make some passing observations which have for their object the nature and constitution of the human mind. It will not, I presume, be questioned that before we begin our operations we ought well to consider the properties and capabilities of that which we operate upon; namely, the mind of the child which is entrusted to our guidance and direction, and which we have to mould and form to our purpose. In our physical operations, when acting upon matter, we conceive it necessary that we should inform ourselves respecting the properties of the particular substance which we are seeking to change or modify. We do not apply acids to polished steel, to preserve it from rust; nor seek to give lustre to our furniture, by rubbing it with brickdust. The artisan, working in metals, must make himself acquainted with their several properties, and the effects produced upon them by heat, or he will not succeed in shaping and tempering them to his purpose; and the agriculturist must know the qualities of his soil, before he can cultivate it to advantage.

A knowledge of the nature and properties of mind, in all who concern themselves with education, is no less necessary, in order to produce upon it the desired effects. "If you attempt to act upon the mind," says a distinguished writer, "in a way not adapted to its nature, the least evil you incur is to lose your labor."*

I can, perhaps, best explain and illustrate what I would say in relation to the properties of mind, so far as development is concerned, by

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* James Mill.

a reference to what takes place in regard to the members and organs of the body, when vigorously exercised; or, on the contrary, when comparatively unemployed, and with their several functions in a state of torpor.

There is a close analogy existing between the bodily and mental constitution; they are equally invigorated, and their powers increased by use and exercise; and without these necessary conditions, neither the one nor the other can be maintained in a sound and efficient state. If unused, or used but little, they alike languish; and, were this unnatural state of activity to be continued, they would, in time, not only lose the power of performing their several functions, but perish, ere long, with the entire man. The organs of sense are highly susceptible of improvement in the increased power of discrimination which they gain by a diligent and constant use, particularly when the mind is much and habitually interested in the exercise of their functions; as is the case when any particular avocation or pursuit in life, makes large demands upon their powers, and renders a nice discrimination essential to success. This may be exemplified in a variety of instances.

The practiced eye of the hunter will see game, and strike it with unerring aim, when the eye of another, in search of the same objects, will wander over space without making any such discovery. The eye of the latter has not been trained to vigilance and accuracy in the same pursuit. The Indian will trace, for miles, the footsteps of a savage foe, where the civilized man, unaccustomed to the wilderness, is unable to detect the slightest indications.

The mariner will decry a distant object at sea—land, or a sail far away on the horizon—long before the eyes of the landsman can distinguish anything but a waste of waters, and the wide-spread canopy of Heaven. The artist, even of mediocre powers, will discern hues and tints, and lines and forms, of exquisite beauty, which to another are imperceptible, and but little apprehended when pointed out.

And so it is with regard to the other senses. We all know the great difference between a cultivated and an uncultivated ear, as relates to music and sounds generally. We know the niceness of discrimination often acquired by the organs of smell, when habitually and carefully exercised upon different odors; and we are equally familiar with the fastidious tastes of the *epicure*, whose every thought has been ignobly given to the gratification of his palate. The discriminating powers of the tactual organs, also, are capable of being improved to as great a degree as those of the organs above mentioned. These consist of the finer nerves, which are distributed over the entire body, but more particularly in the ends of the fingers. We may learn to how great a degree they may be improved, by a careful and anxious use, from what we witness of their greater perfection in all those who have the misfortune to be blind. Deprived of one sense, they are under the necessity, in some degree, of compensating the loss by making increased demands upon another.

The organs of sense, exercised and improved as above described, are thus exercised under the stimulus of the desires which actuate their owners, and for the accomplishment of objects to be attained only

by means of the senses. It will not be disputed that the mind partakes, in some degree, of the benefit, and shares with the organs in the additional powers thus acquired; the faculty of attention is brought into exercise and increased; but it is little to be questioned that the organs themselves have been physically strengthened and enlarged by the exercise, and have thus become more obedient to the will, and better adapted to subserve the purposes of the mind.

The mind acts, there is no doubt, through and by means of cerebral organs, which are physically increased and strengthened by vigorous use, in the same manner and degree as the external organs; and this physiologists account for in both cases, by stating that a greater quantity of blood is determined to those parts which are most actively employed.

In regard to mind, this takes place under the influence of strong desires and impulsive motives by which the faculties are excited into energetic action. The incentives must be present to the mind equally in the one case as in the other.

For as the powers of vision do not become increased by a mere exhibition of sights being presented to the eye, nor the ear by a bare production of sounds, neither will the powers of thought be materially benefitted by the mechanical methods of *communicating* knowledge usually prevalent in our schools, but only by the incitements of the motives to be supplied by circumstances, or by the intelligence and efforts of the teacher. The mind, then, is not to be regarded as a mere repository for storing up *objective* facts, and truths already ascertained under a determinate shape and form, but rather as an organ for assimilating to itself the mental aliment which is presented, or which it finds for itself.

The process by which it appropriates knowledge, or makes it its own, is, indeed, strictly analagous to that which is carried on by the digestive organs of the body, which by their functions elaborate the food and separate it into its constituents.

Thus prepared, those portions of it which are nutritive get distributed by the appropriate ducts, to the various parts of the body, of which they come to form a constituent part, or, in the language of physiologists, become *assimilated.* I might pursue the analogy between mind and body still farther, and instance the effects which use and exercise, when considerable in degree, produce upon the limbs, the tendons, and muscular fibre, and, in short, upon the whole physical frame, which is invigorated in proportion to the amount of exercise it undergoes, when not excessive, but this would be superfluous after what I have already shown to be the case respecting the organs of sense. I will subjoin, however, a few observations, exhibiting the consequences which result from a disuse of any member of the body, or from an organ being deprived of its accustomed and appropriate stimulus—leaving to my readers the application, in the confidence that they will not controvert the fact, that the great physiological law of the body is equally applicable to the mind, namely, that what is unused languishes and loses its powers and ultimately its life. I will, on this occasion, confine my remarks to what relates to the eye; and what I have to say regarding that organ will be comprised in a very few words.

The habitual stimulus of light is essential to vision, and for preserving the organ in a fitting state to perform its functions. Were it to be deprived of light for any considerable length of time, vision would become imperfect; and were light to be permanently excluded, it would finally become extinguished.

The fluids of the organ, it is probable, would no longer be secreted, or they would no longer be in a condition to reflect and refract the rays of light, were these latter to be admitted to the eye. The membranes would lose their sensitiveness, and the different tissues, perhaps, become disorganized.

The faculties may be cultivated to a considerable extent without the use of books, and better, frequently, without than with them. Letters, as I have before observed, and the knowledge we cultivate, are to be regarded only as a means, although, when properly and judiciously used, the principal means; and one which we could now but ill dispense with. Yet parents and teachers do not well to look upon literature and its concomitants, as an ultimate consideration. In so doing they will be apt to overlook and neglect the most essential objects of education—the right formation of the minds and characters of their children. Much might here be added with advantage, on the subject of mental culture, but as repetition is unseemly, I refer the reader to an article under that title published in the August and September numbers of the last year's 'Journal,' for much of what I would otherwise say as adapted to the present occasion.

After the foregoing expositions, and with our minds intent upon the principles already developed, let us now take a survey of the old methods of instruction which prevailed almost universally not half a century ago. For although in canvassing their merits, we shall see but little to imitate and much to avoid, yet, in a review of their defects, or objectionable tendencies—much of the leaven of which may yet be found in our schools—we may get a negative instruction. While engaged in this task, and in carefully considering the means by which we can best operate upon the youthful mind, so as to unfold its capabilities and excite in it a love for study and a desire for improvement, we shall do well to keep in mind the sentiment of a philosophic writer, which I have already quoted above, and which I shall use as a text throughout these disquisitions. It is this: "*If you attempt to act upon the mind in a way not adapted to its nature, the least evil you incur is to lose your labor.*" The severe and stringent discipline imposed upon the pupil under the old system, sought to impress the mind by operating upon the body. The fear of punishment, and not the love of learning, was the governing principle thought best adapted to incline the mind to study, and the most suitable means for stimulating the thinking faculties; whether, also, for mending the heart and chastening the affections, I will not say.

The rod and the ferule were more relied upon than any direct means of persuasion, or the excitements of inquiry in the mind itself. This species of discipline was resorted to on the same principle that physicians act upon, when they apply a blister, that of curing a disorder in a part which cannot be got at, by producing the same in another that can. But the effects of fear upon the mind—the fear of physical

punishment—is deadening in its influence upon the faculties, and debasing to the feelings, and is far more likely to produce torpor of the faculties than to quicken them into activity. By this mode of discipline, the bigger the dunce the more he must be flogged, until the bigger a dunce he still becomes. Yet the system was thought, in its day, to be admirable; so much so, that the more rigid and severe a disciplinarian a teacher was, upon this plan, the more highly he was esteemed by the community; and this was the case at a period within my own recollection. The father of the celebrated Archdeacon Paley, taught a grammar school within a mile of my native village. He was more remarkable for his severity than any other teacher known in those parts. He lived and taught there somewhat before my time; but many an eulogy I have heard pronounced upon him, when I was a boy, for his flogging qualities. "He was a prime teacher," said the men of that day, "for he flogged learning into his scholars."

The following observations, applicable to my purpose, are extracted from the "Quarterly Journal of Education," published in 1831, by the "Society for the Diffusion of Useful Knowledge."

"Even now there prevails in our best public schools the draconic practice of the rod, a mere expedient for saving time and trouble to the masters; a practice whereby all sorts of faults are wilfully confounded and assimilated, since teachers of learning and science inflict indiscriminately the same infamous punishment upon all kinds of delinquents, who can deny that amiable, good-natured boys, are daily degraded to the same level with decidedly dishonest, unpromising school-fellows, when their fault is nothing more than some trifling irregularity, or the consequence of some careless habit, for which, perhaps, the master is censurable? but who can wonder at it? For, is it a grosser inconsistency to flog a boy on account of some blunder in his parsing and scanning, than to plague him intentionally with an extra lesson, on account of some pistol-firing, or pane-breaking, or some other faults, which have not the least connection with his studies? We admit, indeed, that boys should acquire the habit of doing the regular school business; but it is beyond our conception, that boys should be punished with lessons because they do not like them. Poor boys! how can you be fond of lessons which you daily see imposed as a punishment? How can you improve in studies? How can you understand the object of studies which cost you so many tears?"

I will not venture to say that stripes should never be inflicted; there may be delinquencies in a pupil, which, at times, make it expedient if not necessary to resort to them—but they should not be used on slight occasions, if ever; and certainly there should be no attempt to flog his lessons into him—a course of procedure by which the mind of the pupil is *acted upon in a way not adapted to its nature*—if we might not rather say that his body is acted upon in a way but little suited to his mind.

Kindness and sympathy in the teacher, are the most unequivocal tests by which he can manifest to his pupils the interest he takes in their welfare and advancement. The exercise of these will be found to be the most effectual means for influencing the mind, by enlisting

the feelings; they are what every child can understand and appreciate—and we may, by their means, win him over to our purpose, when every other expedient has failed. Nor need these manifestations be accompanied by a demeanor that is too familiar, or which might amount to a pernicious indulgence. A proper judgment will always guide the teacher, and direct him in what manner, and on what occasions, to administer kindness and exhibit sympathy.

He must becomingly sustain his dignity, and maintain his respectability. But the world has been slow to believe in the efficacy of kindness; it is beginning, though late, to learn how much more potent an instrument it is, when accompanied by sincerity, for working out a good purpose with our fellow men, whether of conciliation or reform, than that of the opposite course, by the practice of harshness and duplicity. But I must not longer indulge that sentimental vein of thought which I am so prone to get into, but go on with my strictures. Under the old system, memory was singled out from all the other powers of the mind, and cultivated almost exclusively. It was put in constant requisition, and the number of words was beyond all proportion greater than that of the ideas acquired; and this is too much the case at the present time.

The mind of the pupil was wearied and oppressed with an endless routine of unmeaning tasks, until his books and his lessons became hateful to his sight; and certainly, if we were desirous of giving the youth a distaste for knowledge, and a disgust for his studies, no means could more effectually answer that purpose: this is to "act upon the mind in a way not adapted to its nature."

It wearies without interesting; for it is labor in which the faculties are but little, if at all, concerned. I will again resort to the pages of the "Quarterly Journal of Education," for additional light, which I shall probably have repeated occasions for using. A writer in that journal observes as follows: "We can scarcely too much deprecate that system of instruction in which every valuable rule is committed to memory—where every species of information, useless as well as useful, is made the subject of question and answer, and the words of the author are to be carefully repeated. So far from insisting that the pupils should go through these wearisome tasks, the rational instructor would never require them, and would interdict the system of answering questions by rote. Let it be remembered that reasonable beings, not parrots, are the objects under instruction, and that they have other and higher faculties to be cultivated than mere memory.

"Now it happens that of all the powers of the mind, memory, as far as it is merely the aptitude of learning by rote, is of the least consequence to us in after life; and yet this faculty, useful only as a subordinate—this humble assistant to the nobler powers of judgment, reason, and invention—usurps their place, and reigns paramount in the academic hall. It would be as reasonable in developing the physical powers, if only one set of muscles were brought into action.

"It is said by the advocates of mnemonic tuition, that memory alone can be cultivated in childhood, as the other powers of the mind do not show themselves until riper years. This is entirely a fallacy; it is always found, where the attempt has been made, to call forth higher

faculties, that memory is precisely that one which they find most irksome to exercise, except as the handmaid to other powers." * * * * "When the system of cultivating the memory alone is wholly pursued, instead of inviting on to knowledge, every thing is done to create and affirm a distaste for it.

"Long tasks are assigned whose meanings are not understood, and the memory is stored with terms to which no ideas are affixed. The understanding has no part in education; a quick memory gains the palm; and, in consequence, the pupil grows up without ever having learned to think. It is essentially necessary, in plans of rational education, never to teach children any thing which they cannot perfectly comprehend; if a subject prove too abstruse, put it aside till their more ripened intellects enable them to comprehend it. Perhaps, in pursuing this method, they may sometimes appear backward in the race; and maternal vanity, or rather an amiable diffidence in her own powers of instruction, may induce a mother to stimulate her pupils to an injurious exertion.

"She cannot be too earnestly dissuaded from this course. Let her ever keep in recollection, that she must be carefully storing the minds of her children with clear ideas, giving them the love of knowledge, and the habit of exercising their understandings; and that it is of the first consequence to the success of her efforts, that she does not make learning assume a repulsive shape."

NO. IV.

THE INTELLECTUAL DISCIPLINE OF SCHOOLS—*continued.*

In resuming my strictures on the old methods of instruction, I have to remark, in continuation of the subject, that the whole discipline of the school was mechanical rather than intellectual. Every process was worked out by square and rule, and mind was dealt with as if it were matter. It was used more like a machine for shaping out determinate and previously modelled forms, than as an efficient power capable of original and spontaneous action. Rules were given in abundance, but they were learned and applied by rote; the reasons and principles on which they were founded being permitted to rest undisturbed in the deep recesses of thought, to be found only in minds of mathematical or other learned research of high order. They were but rarely explained or reverted to. No analysis was instituted, and no inquiry was excited in the mind of the pupil. The pupil, therefore, and too frequently his preceptor also, being thus innocent of reasons, was engaged, as I before said, in a mere mechanical labor unproductive in intellectual fruits, and more calculated, indeed, to discourage and repress the efforts of the understanding, than to call forth its powers. There was his task-work ever before him, day by day, and hour by hour; that he knew must be performed, and nothing more was required of him.

Well may we exclaim, "poor boys! how can you improve in stu-

dies?" how can you, under such a system, comprehend what you are required to study, or perform the mental labor imposed upon you, when you are not permitted leisure to *think?*

The advance that was made, and the reason which became developed, under this rigid and irrational system, was made and developed —when such happened to be the case—by the force of native intellect, and the energy supplied by self-reliance, in spite of the impediments placed in the way. And certainly that portion of knowledge which was obtained by these means, became stereotyped upon the mind; but it was apt to be pedantic, and the mind of the scholar narrow in its conceptions—and mainly because it had not been exercised in a sufficient variety of knowledge. A writer in the "Quarterly Journal of Education," has the following observations, appropriate to this branch of my subject:

"Although great progress has been made in rational education, the science is still in its infancy, and but imperfectly understood by the generality of instructors. The light of reason has indeed dawned in all its brightness upon the few; but it has not yet dispelled the mists of prejudice and ignorance, which have so long enveloped this subject. When, however, we consider how much has been accomplished in a short period, we cannot but augur favorably for the future. Till nearly the close of the last century, narrow-minded notions on the objects of education, and a careless neglect of its value, almost universally prevailed.

"The duty of parents, in forming the minds of their children, was then supposed to consist in sending them to school at a certain age, and dooming them, for a certain number of years, to the irrational discipline of instructors, whose study was not so much how to improve their scholars, as by what means they could render the task as little burdensome as possible to themselves. The ciphering books of the sons, skilfully adorned with many intricate flourishes of penmanship, and the sampiers of the daughters, artfully worked in all the worsted beauties of cross-stitch trees and landscapes, were taken by parents as sufficient evidence of their children's proficiency. At that period, young persons, and especially females, who were desirous of enlarging the scanty stock of knowledge which they had received at school, found the greatest difficulty in gratifying their wishes.

"They could obtain no elementary books, no rational explanations of the phenomena of nature by which they were surrounded, and were forced, unassisted, and perhaps even discouraged, to win their way to intellectual acquirements, which it thus demanded no ordinary energy to attain. Where this energy existed, these very difficulties, and this dependence on self, undoubtedly tended to strengthen the mind, and to sharpen the intellect.

"Yet, where the soil has not been duly prepared, and the seeds of knowledge have not been sown, how few are ever found, in after life, striving to enrich their minds by the pursuit of objects which ennoble our nature!"

From the representations made above, in this and the preceding article, in regard to the old methods of instruction, it must be evident to the reader that the maxims which I have laid down for my guid-

ance, in thus treating of school discipline, were violated or disregarded; the course pursued was not such as to "excite in the pupil a love for his studies;" and the mind was acted upon in a way not adapted to its nature.

The harsher features of the system, consisting in the discipline of the rod and ferule, have long since been relaxed by teachers, and the public mind has become sufficiently hostile, perhaps, to a renewed exhibition of them, that we need be under no apprehension of their reappearance; but, whether it may not be that there is now too great a relaxation in our schools, generally, may be a subject deserving our inquiry.

It is not the discontinuance of the practice of flogging that I would regard as objectionable; that practice, I think, we may well dispense with, under laws and regulations properly maintained; but it is the prevalent want of due subordination in our youth, which, in the present day, I should complain of and protest against. This grows out of a mistaken feeling of independence, and absurd notions of republican self-government, which are, in the school room, out of place, or not in keeping with the circumstances in which they are entertained. This is more especially the case in the higher institutions of learning—our colleges and universities—where beardless boys are aiming to wrest the sceptre from their teacher, and usurp the dominion. If I am rightly informed, cases of insubordination to the well-known regulations of the institution have not unfrequently occurred, which were strictly rebellious.

It is, by the interference of parents and the public generally, that these evils can alone be corrected; but it is to be feared that they are more in fault than the actual delinquents, in regarding such instances with too lenient a temper, if they do not directly give countenance and encouragement to them.

Efficient discipline is necessary to the permanent prosperity of our literary institutions; and it is not to be expected that the objects for which they were founded, can be attained by leaving their government to the suffrages of the students themselves, or that they can ever prosper under such guidance. The government of our seminaries should be established and conducted on the parental model; it should be authoritative, while it is conciliatory. A literary institution is only an extended family, subjected to the authority of a united head. But, whoever thought of branding a parent with despotism, because he did not call his wise infants, children, and domestics, to aid him in making laws for their government? It is highly necessary for the interests of all, that the teacher should, in a suitable manner, maintain his authority—make himself respected, as well as loved; but, in properly enforcing the regulations of his school, he requires support from without.

If parents would rightly discharge *their* duties, his task, in this respect, would be an easy one; but unfortunately they are, in too many instances, neglectful of this, or not sufficiently impressed with the necessity and importance of exercising a careful vigilance over the morals and habits of their children. They are over partial in their regards, and too inconsistent in their conduct and the course they

pursue with them; and yet they frequently require or expect the teacher to do that which they themselves are unable or unwilling to effect with their own children, and to do it without the exercise of severity. The teacher, however, may do much even in the worst cases, by a firm, decided, and consistent course of conduct, and without having recourse to any undue severity; but the exercise of tact and judgment will be necessary, as well as no small degree of forbearance.

"Much, indeed, of a child's progress will depend on the moral character of the teacher, and his fitness for the business of tuition. The dispositions of teachers vary. One may be kind and prepossessing in manners, and so exert a powerful influence over the child's will and affections; while another, of less kindly nature, is impatient and ill-humored, and communicates all his unamiable feelings to his pupil, without possessing any useful influence over him.

"One sees the child as he is, volatile and playful—in short, a child; the other forgets the disparity of their years and intellect, and feels surprised and disappointed at what he calls the lad's stupidity; merely because himself is stupid enough to forget that he has a child to teach, and not a man!"*

After these remarks upon the defects inherent in the old system of instruction, sufficient for our purpose, let us now turn our attention to existing modes of teaching among ourselves, here in the west—consider the defects which still remain—sufficiently numerous—and inquire how they may be remedied?

There is yet, in the methods of instruction pursued in our schools, too much mechanical detail, and too little exercise is given to the understanding of the pupil. The generality of teachers, themselves, are too little informed in those methods which are best adapted to the development of thought, and which are now being successfully employed, though by no means generally, in many countries much older and farther advanced in a knowledge of the science, than can be presumed to be the case with respect to our own. Too much use is made of books, while the books themselves are far from being what they ought to be, and oral instruction is too sparingly given. Children, with the book before them, are far more intent upon the words than upon the ideas they are meant to convey. They get their lessons from its pages, therefore too much by rote; and, if our school books were better adapted to the purposes they are designed for, they would still be used too mechanically by the child, as all books frequently are by the adult. Children want more lively images of ideas than can be presented to their minds in words on a printed page.

Their powers of attention are yet very feeble, and they are altogether incapable of abstraction until somewhat advanced. Their reason is but slightly developed; but their imaginations are strong and lively, and forcibly impressed by sensible images and living objects.

Nor can I, for this reason, approve even of the series of questions usually appended to school books, while there is a competent living teacher, whose office it should be to propound questions. What the teacher himself says, and the interrogatories he puts, are much more likely to elicit thought, and excite inquiry, than any thing which is

* Quarterly Journal of Education.

contained in the book. Besides, children are apt to think that what the teacher says is easier to comprehend than the language of the book, and they will make some efforts to understand him. I may add, also, unless the remark be thought too refined, that intelligence, in this instance, is more directly and more simply conveyed to the mind through the ear than through the eye. This latter organ somewhat distracts the mind with images—the combinations of letters and syllables, which are but the signs of words—at least this may be the case in regard to children, whose minds have thus a two-fold operation to perform; they have first to interpret these signs, and then the words, which are themselves signs, before they can arrive at the thing signified; while the ear receives the words themselves, accompanied by the expressive intonations of the voice. Books, notwithstanding, are to some extent indispensable; but, as I have before said, they should be less resorted to, and used after a different manner. Our system of instruction is, in some respects, radically and essentially erroneous; we begin where we should end, by teaching systematized knowledge at too early a period, and before the mind of the child is at all prepared for receiving it.

In doing so, we necessarily use a language which is in great part incomprehensible to the child who is as yet, and before he has been trained in the intellectual part of reading—which is, indeed, rarely done—only capable of apprehending simple and not compound ideas. As before remarked, the efforts of the teacher should be directed mainly with the view of *preparing* the minds of his pupils for the reception of knowledge, rather than actually to communicate it. He must, indeed, use knowledge of some kind for this purpose, but it need not, nor ought it, to be exclusively that contained in those branches usually taught in schools; he should direct their attention to objects and their properties, as well as to words—learn them the art of distinguishing, and teach them to observe nature.

And here we may fitly ask the questions, what is knowledge? and how is it acquired? Is it a something to be received passively by the mind, with which the memory alone is concerned? or is it not rather what the mind obtains for itself, by its own action upon that which is presented to it? The phrase to "communicate knowledge," commonly used by us, gives a false idea of the manner in which it is obtained; it would seem to indicate that it can be conveyed directly to the mind, as food and liquids are conveyed into the stomach; or be infused into it by the teacher, as water is poured from one vessel into another. But it is not in the power of the teacher so to impart it to his pupils. He must, it is true, supply them with materials; but, unless he can so operate upon their minds, as to cause them to act upon those materials, in a manner which, indeed, bears some analogy to the action of the stomach upon the food which it receives, it will not be knowledge which they get, nor will their minds be nourished by what is thus furnished them, any more than the body would be nourished by food remaining undigested.

But this will not be done by the pupils on the simple injunction of the teacher, any more than they will acquire knowledge by the circumstance of his merely stating to them what it is that he wishes them

to know. There is too much *communicated* by the teacher, and not enough left to the operation of their own minds.

He should, indeed, explain and illustrate his subject in every possible way, but he should incite the minds of his pupils by all the ingenuity he is master of, to make discoveries for themselves.

He can best succeed in doing this by leading them on from one step of progress to another, by a series of judicious interrogatories adapted to their years and capacities. That this is the course most in accordance with the nature of the child's mind, and the means best adapted for exciting thought and inquiry—the object we should aim at—there can be no doubt. In doing this we seize upon, and address ourselves to the principle of curiosity inherent in the mind, and implanted there for the purpose, we may presume, and which, if rightly regarded will of itself sufficiently indicate to us how we are to proceed.

The pupil, when he succeeds in answering a question thus put to him, unpremeditatedly, or, in solving a difficulty which required from him, perhaps, some acuteness of discernment, is gratified with the exercise of his own ingenuity. He gets a habit of turning a thing over in his mind, and of regarding it in its various aspects; thought, in him becomes vigorous and energetic, and he comes to take delight in its exercise. He gets to understand his lessons thoroughly, for he is taught to work out every problem by a regular process.

Instead of regarding his intellectual labor as a task that is irksome, he finds in it a means of entertainment. These facts and representations may serve to assure us that, so far as a judicious system of interrogatories is concerned, we have by means of it, attained to a correct discipline of the intellect; one that accords with the essential condition to be observed for exciting thought in the pupil, and producing in him a love for his studies. We act upon *the mind in a way that is adapted to its nature.* The principle of curiosity in the mind is that which stimulates to enquiry.

Without it we could make no progress in knowledge of any kind, for we should feel no interest in the acquisition. When employed upon laudable objects and so directed as chiefly to expend its force upon what is curious in nature and art, and to concern itself with the history of man, and the progress of the human mind, it can scarcely be too much excited in minds that are maturing; although we should be careful not to over-task the faculties of young children, but should exercise them moderately, and afford sufficient opportunities for physical development.

But when curiosity becomes misdirected, or is left to exert itself upon objects unworthy of our rational nature, it comes to be employed upon trifles, and is apt to exhaust itself upon neighborhood news and personal scandal. It then obtains its chief gratification from busy intermeddlings with the affairs of others, and we term it *inquisitiveness.* Under this character my readers will be sufficiently aware that it needs not to be excited, but repressed.

With a view to carrying out the principles which I am here endeavoring to explain and develop, let us now turn our attention to the first elements of learning, and inquire what exercise the teacher can find for the minds of his pupils in their reading lessons. Teachers,

generally, while giving instructions in reading, regard it as a matter of minor consequence. They undertake it as a necessary piece of drudgery, because children must become acquainted with words before they can in any manner proceed further, whether ideas be affixed to them or not. They necessarily direct their attention to syllables, spelling, pronunciation, &c.; and if what relates to these is performed with ordinary dexterity, they are satisfied, without any apparent consciousness that their duties extend to anything beyond this, or that any further use can be made of the lesson. It is hurried over as a mere mechanical exercise, and as if nothing but voice and memory were of any concern. Emphasis and the proper modulations of the voice even, are but seldom duly regarded. The child is permitted to read, frequently, in a monotonous and disagreeable tone of voice, quite different from that which he uses when talking. He reads without understanding, and he cannot, therefore, read well—a consideration which, of itself, is well worth regarding, if nothing else were involved. When thus taught, it is often the case that the child is scarcely aware that any meaning is attached to the language in the book, and his lesson becomes indeed a drudgery to him, and it is not to be wondered at if he takes a distaste to it, and to his studies generally.

He is subsequently taken through other branches of learning without being made acquainted with the terms—with the language in which they are attempted to be taught, although his mother tongue. The advances which he makes in his studies, therefore, are necessarily tardy, and the exercises imposed upon him become wearisome; what wonder! Thus years are uselessly spent at school, and, in all that relates to the true objects of education, worse than uselessly. A permanent injury is often inflicted upon the intellects of children by the irrational methods pursued in attempting to teach them knowledge without exercising their understandings.

Their faculties get into a state of torpor from the difficulties and discouragements they meet with in their unmeaning task-work; and it will be found much more difficult, subsequently, to rouse them into activity, when a different and rational course is resorted to. Mental habits have been formed which resist a correct discipline: and to unlearn is harder than to learn. If children cannot be instructed at home, and must go to such schools and such teachers as I am here regarding, it would be better not to send them until they have attained the age of ten or twelve years, even should they not previously have learned a letter. They will at those years, be more capable of comprehending their task-work, and their faculties will not be in the same danger. When fourteen or fifteen years of age they will have better informed minds than if they had been kept at school from five years old up to that period, and their capacities for further acquisition will be less blunted. But to whatever kind of a teacher parents send their children, they but ill-acquit themselves of their parental trust, if they neglect giving them instruction at home. Their auxiliaries are a great advantage to their children.

Notwithstanding the little estimation in which the exercise of reading is mostly held in schools, the lessons of children, while thus en-

gaged, can be so conducted, there is no doubt, as to afford one of the best mental disciplines that can be employed. In reading, there is an intellectual as well as a mechanical department, which equally demands the attention of the teacher, and it should be his care, at all times, that the child comprehends, as much as possible, every word in his lesson, and the meaning and import of every sentence which he reads. And if he has correct views of his duty, he will, during the recital, put frequent interrogatories to him, and take every opportunity of illustrating the subject of the lesson, by explaining every allusion to facts in history and science, or in relation to any other matters which occur, and this without any regard to the slowness of the progress made in getting over the page.

And as the pupil advances in his knowledge of language, and his comprehensiveness increases, the competent teacher will occasionally exercise him in the finding of synonyms for words, and in the task of expressing the same idea or thing in a different phraseology. And when a knowledge of the grammatical construction has been obtained, he will point out to him the beauties and defects—if any—of the composition; direct his attention to tropes and figures, and explain and illustrate them.

At the age when a child is generally first taught his letters and learns to read, it has but a very imperfect knowledge of language. The words it has used, and which alone it comprehends, are such only as are suited to its simple ideas, and which latter mostly relate to tangible and visible objects.

Our language, itself, in its present advanced state, is a medium of thought and communication of a profound and complex structure, and is only to be mastered in its full extent by a long and laborious study.

It has become what it is by slow degrees, improving as knowledge has increased, and as the human mind became expanded by taking a wider and still wider range of enquiry, and under the care, and by the wants, of the most highly cultivated intellects.

Language and cultivation act and re-act the one upon the other; cultivation, or the acquisition of knowledge contributes to the improvement of language, and the improvement thus obtained, facilitates further acquisitions. Language is indebted to poetry—to the efforts of the imagination—for its embellishments; it is indebted to philosophy, or the higher efforts of an exalted reason, for its general terms, its expressiveness and comprehensiveness.

Our speech abounds more and more with words that express complex and general ideas, and with terms for condensing thought, which require powers of abstraction far beyond any which the mind of the child is equal to, or can be made to comprehend. And this is so much the case that it has become necessary to prosecute the study of language, even of our mother tongue, as a distinct object, which must be entered upon, in what relates to its complexity, only in proportion as the mind of the student matures and becomes capable of analyzing it; and this, apart from its direct uses, is a mental exercise as beneficial as any other.

Words are the main instruments of thought, and the full development of our reasoning and other powers of mind, depends very much

upon our knowledge and use of language. "Words," says an ingenious author, "are of the utmost importance to the human understanding. Almost all the ideas employed by us in matters of reasoning have been acquired by words. In our most retired contemplations we think for the most part in words. Without words, uttered or thought upon, we could not probably carry on any long train of deduction. The science of thinking, therefore, is little else than the science of words.

"He that has not become accustomed to refine upon words, and discriminate their shades of meaning, will think and reason after a very inaccurate and slovenly manner. He that is not able to call his ideas by various names, borrowed from various languages, will scarcely be able to conceive his idea in any way precise, close, and unconfused. If, therefore, a man were confined in a desert island, and would never again have occasion so much as to hear the sound of his own voice, yet if at the same time he would successfully cultivate his understanding, he must apply himself to a minute and persevering study of words and language."*

The mind of the child is most strongly impressed with sensible objects; it requires images and not abstractions; if it is impressed with words it is rather when they are oral than as read in the book. The printed page, even when studiously divested of words expressive of complex ideas, conveys but little meaning to its mind.

The child has to learn to read, and is far mnre intent upon the words themselves, the letters that form them, and the sounds to be given them, than upon the ideas which they are intended to convey.

But he must be trained in the mechanical part of reading, and while so trained, his attention is directed to letters, syllables, pronunciation, punctuation, &c., that with his mind thus engaged, it is not to be expected that he will have his thoughts employed upon the significancy of sentences, or even upon the import of words, unless specially and separately exercised in that way by his instructor, but which the instructor rarely undertakes to do. Without this intellectual discipline, the child gets a habit of reading with but little regard to such matters, and which adheres to him in a great measure it may be through life.

It must be recollected that mere reading and writing are not education, as they are sometimes erroneously deemed; they are not knowledge, but the instruments or means only, by which knowledge is to be obtained. These arts may be accurately and extensively acquired with but little effort of thought. Education regards the exercise of the understanding, and school discipline, to be effective for that purpose, and really beneficial to the mind itself, must not be merely imitative and mechanical, but intellectual.

But the course here recommended, were it to be closely adhered to by a teacher, would be little satisfactory to those parents who, having no independent or intelligent views of their own, are unduly attached to usage. They would not be persuaded that their children were making progress in learning. The teacher, in the estimation of patrons such as these, must pass his pupils quickly from class to class,

* William Godwin.

and from one book to another; he must hasten to induct them into the usual branches of arithmetic, geography and the mysteries of grammar. Unless he does this he becomes obnoxious to their censure and rebuke, however much he may be engaged in exercising their understandings.

The importance of a correct early training, both intellectually and morally, is in general, but little appreciated. "It has been observed," remarks Miss Edgeworth, "that what we are when we are twenty, depends upon what we were when we were ten years old. What a young man is at college, depends upon what he wasat school; and what he is at school, depends upon what he was before he went to shcool. In his father's house, the first important lessons, those which decide his future abilities and character, must be learned." * * * "Suppose that parents educated their children well for the first eight or nine years of their lives, and then sent them all to public seminaries, what a difference this must immediately make in public education; the boys would all be disposed to improve themselves with all the ardor which the most sanguine preceptor would desire; their tutors would find that there was nothing to be *unlearned;* no habits of idleness to conquer; no perverse stupidity would provoke them; no capricious contempt of application would appear in pupils of the quickest abilities. The moral education could be made a part of the preceptor's care, with some hopes of success." * * * "Ten well educated boys, sent to a public seminary at nine or ten years old, would, probably, far surpass their competitors in every respect; they would inspire others with so much emulation, would do their parents and preceptors so much credit, that numbers would eagerly inquire into the causes of their superiority; and these boys would, perhaps, do more good by their example, than by their actual acquirements." *

[Practical Discipline to be continued.]

ART. III.—ON THE NATURAL HISTORY OF MAN.

BY PETER E. BLAND, ESQ., OF MO.

THROUGHOUT the works of God, is manifest a harmony striking and beautiful. How vast is nature! How innumerable her various parts! How stupendous some of her movements! Yet, so nicely are those parts adjusted, and so harmonious are those movements, that we behold a universe in eternal motion—its countless systems sweeping on in their accustomed course—without the slightest discord.

* Practical Education.

Of creation there are two grand divisions, organized and inorganized. Of the organized there are two divisions, called the animal and vegetable kingdoms. These two, with inorganized creation, constitute the three great departments of nature, which gradually approach, and almost imperceptibly pass into one another. There is a regular grade of the relative importance of the parts of each department, and of the departments themselves. Step by step inorganized matter rises higher in the scale. We see it, a grain of sand, driven to and fro by the wind—we behold it the massive granite, towering, in mountains, amid the clouds, defying the hand of time and the tempests of a thousand ages. There is grandeur in inorganized nature; and, in looking upon some of her scenery, the soul is often full of rapture, mingled with awe.

But, turn the eye upon a spear of grass, and tell me if there be not progression, even from the proudest of inorganic to the humblest of organic creation. The one is indeed grand—sublime; but the other is beautiful in its simplicity, and awakes reflection in the mind. What mysterious hand directs its silent development? I saw it in its infancy, just peeping above the soil. Day by day it stole up and up, until it reached its maturity, and was perfect in all its functions. The mystery, said I, is beautiful, and the tender spear of grass is a monument to the minuteness of the Creator's care.

Pass on to the flowering plant—the shrub—the fruit tree, till the eye rests on the tall cedar of Lebanon, or the majestic oak of America, and you behold the vegetable kingdom rising gradually round by round, from its lowest to its highest orders.

In the animal kingdom, the same regular advancement is perceptible. Its lowest order stands one step above the highest of vegetable creation. Delight and wonder may fill the soul of one, while he looks upon the oak, towering above its neighbors, beautiful in the symmetry and strength of its parts. While he reflects upon its structures—upon its circulatory apparatus, drawing from the earth its juices, and forcing them a hundred feet perpendicular, to the highest branches—upon the leaf, the great chemical apparatus of the plant, receiving the juices in the upper surface, where, acted upon by the sunlight, they become elaborated sap, descend to the lower surface, and are thence distributed to all parts of the body—while he reflects upon these things, he is ready to say, here is the perfection of wisdom—here is beauty—beauty of external appearance, of internal structure, and of that mysterious development which has lifted, in silent and observeless progress, the majestic oak from the acorn sprout.

But, who has noticed attentively the crawling worm, without finding something superior to this, even in its humble existence? Estimate the two, not by the idea of importance, which arises from the uses to which they may be applied, but as isolated from the world around, in their intrinsic importance. The organic structures of each is alike wonderful. The one is rooted to the earth, the other passes freely where it listeth. The one has proudly lifted itself up—stood for ages—defied a thousand storms—but has never experienced a single sensation. The other, though feeble and transitory in its existence, may be, on account of its sensitive organization, the subject of most thril-

ling delight. The one is an unconscious, the other a conscious, being. But, as we pass to the higher orders, how beautifully does animal organism develop itself. Rising gradually in the scale of its perfection, it appears complete in man, the capstone of the vast pyramid of created nature.

Having hurriedly glanced at the progress of creation, and placed man at the summit in the scale of importance, I inquire what are his distinctive features, and is he entitled to the exalted place to which I have assigned him?

In his physical structure there are characteristics, sufficiently marked and numerous, to distinguish him from all other animals; but the question, as to his true position among created beings, must be determined upon other and higher considerations.

Regarding man, then, only in reference to his physical structure, we find him the only genus of his order, which is the bimana. This order reunites with three others in the class mamalia. This class reunites with three others in the division animalia vertebrata. This division reunites with three others in the animal kingdom, which comprehends all animal organization, and its essential characteristics are sensation and voluntary motion.

The order which approaches nearest to man in its conformation, is the quadrumana, which embraces within it all the monkey tribes. So nearly does this order approach the bimana, that it is called by the Malayans "Ourang Outang"—Ourang, in the Malay tongue, being applied in common to this species of monkey, and to man; and Outang, signifying of the woods, the whole name signifies "Man of the Woods," or "Wild Man." And this name, thus signifying, has been received by the great natural historians of Europe and this country.

But, examining more closely, we find this remarkable difference between these two orders: The whole conformation of man indicates that he was designed to walk upright. The leg is so long, in proportion to the arm, and the foot so inflexible, that he would proceed upon all fours with the utmost difficulty; and, on account of the peculiar arrangement of the circulatory apparatus, would be constantly, thus proceeding, in danger of apoplexy. While his head is heavier, in proportion to his body, than that of all other animals, his means of supporting it are weaker; for the cervical ligament, says Cuvier, is entirely wanting in him, and the arrangement of the vertebræ of the neck, is not such as to prevent their flexure forward; and hence it would be impossible for him to hold up his head any length of time, were he to attempt to go on all fours.

But, in the erect position, the leg bears vertically upon a large, strong, and slightly flexible foot, forming an ample base for the support of the body. While his head rests in equilibrium upon the spinal column, its articulation with it being about the centre of its mass.

On the other hand, although the Ourang and other monkeys can walk upright, and very frequently do, it is by no means their natural position. The toes of the hind feet are free and opposable to the others, which are as long and flexible as fingers; these feet are therefore hands, and hence the name of the order, quadrumana. It must be perceived, at a glance, that these thin, flexible hands, could not

afford a base, sufficiently ample for the support of the body constantly upright; while that very flexibility, together with the length of the fore arm, causes the prone position to be easy and natural.

Man, then, is a biped bimana; his natural position is the upright, his feet large, broad, and nearly inflexible; his great toe is on a line with the others, and is not opposable to them, as it is in the foot of the monkey; he possesses the senses of seeing, hearing, taste, feeling and smelling, in great perfection; but this perfection consists not so much in the power of those senses, as in their refinement; his two eyes are not placed as is usual with animals, towards the side of the head, but are directed forwards, and are situated on each side of the nose, which is quite prominent; and his head is much larger, in proportion to his size, than any other animal, especially the front part, so that we find his forehead high and expanded.

According to Cuvier, there are three varieties of the human family—the Caucassian, the Mongolian, and the Negro. Other naturalists add a fourth, embracing all the American tribes of Indians. This race seems to me to be somewhat intermediate of the Caucassian and Mongolian, having more the features of the former—the color of the latter.

The Caucassian is the white race, varying from very fair, according to circumstances of climate, &c., to the tawny; hair varying from black, through the different shades of auburn and red, to the light, and features regular and handsome. The affiliation of tribes, in respect to languages, habits, and features, appears to refer the origin of this race to the neighborhood of the Caucassian Mountains, situated on the line which divides Europe from Asia, and between the Black and Caspian Seas. From thence its tribes seem to have gone forth in every direction. To the southward went the Syrian branch, which produced the Assyrian, the Arab, and the Chaldean; also the Phœnicians, Jews, and Abyssinians. The Indian to the southeast, and the German and Pelasgic branches into Europe. The Scythians, the Tartars, the Finlanders and Hungarians, are considered branches of the Indian family.

This great race is far in advance of all others in civilization, the arts and sciences, in religious systems, and in intellectual strength.

The Mongolian race inhabits the extensive country lying between the Pacific on the east, and the Tartar tribes on the north and west, and the Indian on the southwest. The complexion of this race is dark olive; the cheek bones high, eyes narrow and oblique, and the visage not so oval as in the other varieties. The people of the Chinese Empire are, at present, its most distinguished branch.

The Negro inhabits Africa. His complexion is black, his hair black, short, and kinked; his nose is flat, lips thick, and forehead generally contracted. In civilization and mental power, this race seems to be far behind the others.

The American Indian dwelt on this continent when it was discovered by Columbus. His features nearly resemble those of the Caucassian, and also the form of his head; but his color is rather that of copper. His hair is straight, coarse, and black. When uncorrupted by the white man, proud and stately in his bearing, bold and generous in his disposition, he is a noble example of humanity in an uncultivated state.

The question now arises, whence did these varieties spring? Did they all originate from one common centre of creation, or does each trace back its origin to a separate distinct centre?

We are not left wholly to conjecture on this point. The venerable historian of the sacred writings informs us that God made man, male and female, and from them the world has been peopled.

But how, says the sceptic, do you deduce the fair, beautiful Caucassian, and the jetty African, from the same parent? And, on the bare appearance of incompatability here, without further investigation, he casts aside the divine record as false, and tramples upon the truth of science. Inquire of the natural historian, profound in his researches, and he tells you the five varieties are identical in kind; for the result of the intermarriage of individuals differing in variety, is offspring, which resembles both parents; and this offspring is as productive as the original varieties; but, if the varieties were not identical in kind, this could not be, for observation has brought to light the great law that the offspring of dissimilar kinds cannot reproduce.

Ask of the anatomist, whose head has become white with age, while searching out the hidden things of his science, and he tells you that every bone and every muscle, every nerve, every part, from the greatest to the most minute, is precisely similar, both in form and functions, throughout all the varieties.

Is it more philosophical, then, to derive these varieties, identical in everything that characterizes the human being, from one centre of creation, thus linking humanity together by the strong ties of kindred, or to derive them against the fitness of things, and a positive historical record, from five centres?

Grant your doctrine, says the inquirer for truth, yet how do you reconcile those differences of color, &c., which, though they do not affect the essential characteristics of the species, are very marked?

The history of Jacob furnishes an illustration. A mother, at one birth, gives to the world two sons. The one, like his parents, is without hair; the other is as hairy as a kid, for it was the skin of a kid covering the hands and arms of Jacob, that deceived the father when he blessed the younger, supposing him to be the older. Now here is a difference between two brothers, as remarkable as that between the Ethiopian and European; but this has never been urged as an objection to the sacred book in which it is recorded, for it naturally occurs to every one that it was a case of accident of birth.

Why, then, should accidents of birth in regard to color be deemed incredible? More than this. Why should it be thought strange that He who is omnipotent should overrule the conditions of birth in such a manner, that the offspring may differ in color from the parent? His works proclaim him of wisdom and goodness infinite, and therefore, if circumstances required such interference, we would reasonably expect it.

The climate of Europe, all know, is far better adapted to the fair complexion than the black; while the white man who goes to Africa, seems but to seek his grave. Yet so congenial is that climate to the black, that there he enjoys health and long life.

It appears, then, that the Creator, in his great design of peopling

every country and clime with an identical race, had ample reasons for interfering in the manner suggested, that is, that in a few but sufficient number of cases, with wise design, overruled the conditions of birth, in regard to color.

That mode of accounting for the varieties of color from the effect of warm climates on the skin, darkening it, is not sustained by facts; for climate never renders the white man as black as the negro, and he, returning to his native place, browned as much as may be, soon recovers his former fairness. On the other hand, the negro will remain, generation after generation, in high latitudes, without becoming the slightest shade whiter.

In explaining the unity of the human family, one difficulty yet remains, and that is to account for the Indian of America being here while we deduce him, and the varieties of the eastern continent from the same parent stock.

On this subject there have been many theories and discussions, which left it about as they found it.

On either side of this continent, says one, are boundless waters; how then could a people have reached it, whose only means of navigation was the frail canoe—their only guide the sun and stars? Another starts a question of perhaps greater difficulty, though of minor importance. Admitting, says he, that our Indians were originally from the eastern continent, under what variety do you range them?

As to the first question, it answers my purpose fully to show the possibility of such a passage; for the whole strength of the objection under consideration, rests on its impossibility.

It is known to every one that the two continents approach each other towards the north, until they are separated by a strait only twenty-six miles in width. East Cape and Cape Prince of Wales, lie in latitude about 68 deg. north; and hence, for the greater portion of the year, are connected by a firm bridge of ice. Is it at all incredible, that men, either in pursuit of game or led on by curiosity, or driven before a more powerful tribe, should accomplish the passage of this bridge? Should any object on account of the severity of climate incident to so high a latitude, they should bear in mind that navigators have penetrated to about 75 deg. north.

But the passage may have been effected in the summer. The Aleutian Isles extend entirely across from Kamschatka to Alaska. Guided by this chain, how easy for men to have passed in canoes from isle to isle, until at last they found themselves on the American shore. This they might do either from curiosity, or intentionally seeking a better country, or drifting before the wind.

The second question, as to the variety to which our Indians originally belonged, cannot be answered with certainty. I believe they are most generally referred to the Tartar branch of the Caucassian race. But whether this be true, or whether they themselves form a distinct variety, I shall not here discuss. In either case it is entirely possible, and indeed most probable, that they were driven forward by more warlike tribes, until reaching Behring's Straits, or the Aleutian Isles, they passed over to this continent as already suggested.

It appears, then, that man forms a separate distinct order of the

animal kingdom, as abundantly shown in the characteristics which mark his physical structure—that all the varieties unite in this order, are identical in kind, and have sprung from one pair of parents.

But, in this there is nothing to distinguish man as a superior, but only as a distinct animal. We may as easily distinguish the quadrumana, or quadruped, in the same way. Shall we rest here? Nay rather let us start the question, is the human being a mere animal, sufficiently marked indeed by those great features which separate him from others, and mark his order? or is he an entirely different and superior being, of whom the physical structure, which allies him to the animal world, is but an inconsiderable part?

The gradual rise in the scale of the comparative importance of the departments of creation, which I noticed in the outset, from inorganic matter, through the vegetable kingdom, and the various orders of the animal, up to the most perfect animal organization, seems to indicate that nature ascends step by step, order by order, until it arrives at, and is lost in, the vastness of Him who is, without a cause, eternal, and is yet himself the cause of all things else.

Of this ascending scale, what place does man occupy? The angels of light, those spirits of untarnished purity, which are permitted to dwell in the presence of the Almighty, and encircle his throne, hold the first rank in creation. Man stands next to them. "For," says the Psalmist of Israel, "thou has made him a little lower than the angels, and hast crowned him with glory and honor; thou madest him to have dominion over the works of thy hands; thou has put all things under his feet."

Of all animals, man, were he destitute of those higher faculties which are peculiarly his, would be the most helpless. Nature has not protected him against the inclemency of the seasons, by clothing him in a warm coat of hair. It has not endowed him with that activity and speed requisite for pursuit of prey, or escape from an enemy. Destitute of claws, and large strong teeth, he would be entirely defenceless, and must be preyed upon by other animals. While the arrangement of his teeth, and digestive organs, is such that he would be confined for the most part, for food, to roots, nuts, and fruits.

But, the Creator did not leave him thus destitute and helpless. This animal frame is but the frail, temporary residence of the soul, vast in its intellect, and boundless in its moral power. And Oh! with what infinite wisdom has the structure of the body been adapted for the purpose of its creation. Ten thousand nervous threads, as channels of communication, convey the thoughts of the soul to every part, and back to it the impressions of the external word—the stately, upright position—the form of the body, capable of assuming a thousand attitudes—the hand, constructed with infinite skill, enabling man, by reason of its sensitiveness and adaptation to grasping, to perform whatever he will, all show how wonderfully the body is adapted to being the dwelling-place of the soul during its stay on earth. Yet, if it afforded the soul no channel of communication with other kindred beings, save through sight, and touch, and hearing, with which other animals are endowed, how imperfect would be its organization. The eye often reveals much, and sometimes too much, of the secret thoughts. It is

delightful for two congenial spirits thus to hold silent communion, when circumstances forbid other means. They mutually, through stolen glances, read each other's thoughts, though in pale and imperfect characters. The stream of communication is small, and the thirsty spirit is ever dry. Not so when the soul pours forth, in speech, its friendship and love. Thought flows freely, and all the tenderest sympathies of human nature are roused, and throb responsive to the burning word and thrilling accent. The faculty of speech was, therefore, conferred upon man by his All-wise and Good Creator; and it was conferred that he might both enjoy and enlarge his intellectual and moral powers.

This faculty, bestowed upon no animal but man, is one of the striking characteristics which distinguishes him from all others, as a superior being. It depends upon the peculiar organization of the mouth, tongue and lips. Every animal can produce a voice, but man alone can articulate. It is this power of articulation which constitutes the faculty of speech, that is, the power of producing a great number of sounds sufficiently distinct, to be made the means of conveying distinct ideas to the mind. The intelligence of man, perceiving this power of varying sounds, "wove of them the web of language." As the selection of sounds to represent particular ideas must have been arbitrary, we should naturally expect to find, what is actually true, that on the separation of the varieties and tribes of the human family, they being scattered abroad over the earth, would by degrees, as language progressed, differ more and more in their modes of speech, and in the sounds which compose it, so that, in the course of time, the difference would become so great in the languages of the respective tribes, that their common origin would occur only on the closest analogy of their structures and words. Hence, we now have as many languages as tribes.

The second great characteristic which marks man as a superior being, is his endowment of moral power. This is the power which constitutes him a religious being. It is a remarkable fact, that wherever he has been found, whether on continent or isle, enlightened and refined, or dark and savage, he is alike a worshipping being. But the tribes differ widely in the modes and objects of worship. The Indian, in solemn reverence, adores the "Great Spirit"—the God of his native land. The classic Greek and Roman bowed at the shrine of Gods—the creation of their own fancy—while the Christian, in the simple sublimity of faith, kneels at the altar of prayer, and speaks the desires of his heart in fervency to the living God.

The moral faculty impresses upon man his objection to some superior intelligence; and hence we find him everywhere acknowledging this obligation by religious worship of some kind or other.

The question here starts upon us, if there is but one true God, and if the moral faculty admonishes us of religious obligation, how does it happen that men differ so widely in their religious systems and belief? Let it be borne in mind that the moral faculty is a monitor of duty, and not of facts; and hence it only impresses the obligation of religious duty, but does not inform us as to the object of worship. The true system is that of sublime virtue. The true God is sublime in his perfections; and those who worship him must, by his assistance, ap-

proach somewhat at least to his perfection. The human heart, corrupt and full of abominations, found nothing in the worship of a God so pure, congenial with its natural inclinations, and therefore gradually departed from him, while human fancy wove for itself systems better suited to the inclinations of the depraved heart. But, as the tribes were divided far apart, without intercommunication, the systems thus gradually formed might be expected to differ.

The next great office of the moral is, to constitute man a social being; for the same principle which reminds him of obligation to a superior, impresses him with the idea of duty to his fellows, and prompts the noble sentiments of esteem, friendship, and love. These three ornaments of human nature at first formed the links of society. All the good mutually esteem one another—friendship binds those more frequently associated more closely together—the ties of kindred unite individuals yet more strongly, while the golden chain of love binds two hearts in the perpetual and holiest of all ties—wedlock.

The moral power, thus urging man to esteem, to befriend, and to love his fellow-being, (noble attributes of humanity!) inclines him to society, and this inclination becomes strengthened by necessity. After the deluge, the human family accumulated in the neighborhood of the Caucassian mountains, and were held together through the strength of social feelings, until it became necessary to disperse more widely over the earth. Thus we find them going forth in tribes and companies. Having made their new settlements, they are united for common defence against the beasts of prey. A Nimrod, bold and daring of spirit, beards the lion in his den, and strikes the tiger at the moment of his fearful leap. He quickly gathers adherents about him, and his will sways the community. As numbers increase, violence does also, and the strong begin to oppress the weak. The mighty chieftain of the chase. on the grounds of affording protection to his weaker brethren, clothes himself with power, assumes the crown, and a feeble patriarchy is converted into a despotic monarchy. Thus tribe after tribe was erected into firm despotisms. In time, the tribes having been thus changed from their original simplicity of government, and being separated from each other, lost the fraternal feelings which at first characterized them. It was then that "man become the scourge of man." Inflamed by ambition and the love of plunder, monarch warred with monarch, blood flowed plentifully, cities were destroyed, thrones overturned, mighty kingdoms crushed, and vast empires built up from their ruins.

Thus has society advanced from small communities to great cities, from cities to kingdoms, and from kingdoms to empires.

The last great characteristic which distinguishes man as a superior being, is the intellectual power. It is this power which enables man to accomplish the promptings of the moral. Through it he perceives, thinks, concludes; through it he forms and carries out the great plans of his life; controls the lower orders of creation, and compels the elements to do him service.

Endowed with this exalted faculty, man is a being of vast conceptions. Behold the philosopher! He is silent, and you think him cold and joyless of spirit. Ah, how you mistake! He has lifted the cur-

tain which veiled the mysteries of nature, and now, his soul swelling with joy, he silently gazes on the beautiful harmony of her mighty works.

Beside the midnight lamp, in a lonely room, may be seen a solitary individual. Why bends his frail form over that table, while all but himself are wrapt in sleep? Poor, joyless man! Ah! think not so. Perceive you not how the heart throbs at every stroke of the pen which brings him nearer and nearer the result of his calculations? Perceive you not how the eye kindles, how the countenance glows with living light as the vast conceptions of the planetary system crowd upon his delighted soul? He is Galileo, or Newton, or perhaps La Place. Years ago, you beheld the fiery traveler; he shot away with the speed of lightning, and now pursues his course far beyond the realms of light. Where is he? Ask La Place, he'll tell you. When will he return? The astronomer has solved the problem, and, as it were, with prophetic vision, pierces the darkness of the future, beholds this traveler re-enter the bounds of our system, and tells you when this shall be, to the day and the hour!

What has the intellect of man not accomplished? It has revealed the hidden things of nature—calculated the distances and courses of those great orbs which roll in silent grandeur their eternal rounds within our system. It has changed weakness to strength, and lifted man from frailty and helplessness into power, and happiness, and glory. It has builded the cities of the earth, founded her empires and established her institutions. And now, in its exercise, man narrows the ocean to a single leap, and friends familiarly converse though ten thousand miles apart.

Languages, the moral power, and the intellect, seem to me sufficiently strong characteristics to mark man as a superior being and entirely distinct from all other animals. His life is short, but through the records of history he lives throughout the past, and is acquainted with the great thoughts of all the great who have lived before him. And as there are manifestly two natures united in him, the one material, the other essentially spiritual, may we not reasonably suppose the existence of the soul, which is the spiritual part, throughout all time to come? The annihilation of an intelligence so nobly endowed, could not consist with the economy of that Creator, whose works universally proclaim him of infinite wisdom and goodness. But the Bible, glorious book of Divine revelation, places the question beyond all doubt, and bids the trembling soul put away its fears, for death, it teaches, is but the gateway to eternal life.

Man, born to immortality, endowed with the most exalted faculties, finds no home in this world. Pleasure he pursues, but never attains. Earth hath no joys that may satisfy the quenchless thirst of his deathless spirit. Here he is born—here he sorrows—but here he does not abide. A few years, and the vanities of this life are gone. A few friends circling about the grave, consign the mortal frame to its mother earth—but where is the spirit? Let Montgomery answer:

There is a calm for those who weep,
A rest for weary pilgrims found,
And while the mouldering ashes sleep
Low in the ground,
The soul, of origin divine—
God's glorious image freed from clay,
In Heaven's eternal sphere shall shine,
A star of day.
The sun is but a spark of fire,
A transient meteor in the sky—
The soul, immortal as its sire,
Shall never die.

ART. IV.—THE PRESIDENT—SUB-TREASURY—TARIFF—SLAVERY.

The following communication from Alexander Hamilton, Esq., to the Editor of the Merchant's Magazine, will be found worthy of the most careful perusal of every American citizen. It is so rare that we meet with an article written in reference to public policy that is not tinctured with party politics, or sectional prejudices, that the appearance of one rising above these considerations, and looking alone to truth and to the general happiness and prosperity of the whole country, imparts a thrill of delight similar to that which we experience when meeting with a much valued friend after many years of separation.

The little sympathy which the authors of such articles receive from all organized parties, is calculated to prevent many of the best minds and best men of the country from presenting their views to the public; this is much to be regretted, for it is only from men whose judgments are not mislead by party politics, and who have courage to declare their honest convictions—irrespective of party discipline—that the people at large can learn the true interest of the country.

Almost every public newspaper in the Union is committed to the service of a party, and it would be as reasonable to expect that one would disparage the title by which he holds his estate, as to suppose that an editor would publish with approbation, anything calling in question the policy of his party. And so fearful are they of giving offence, that they dare not suggest the slightest change or modification, lest they should be suspected of defection. We believe, however, that the present time is more favorable to a liberal discussion of public measures than any that has occurred for many years past; and we trust that the well judging and unprejudiced minds of the country will seize upon the opportunity thus afforded them, to give a better direction to public measures.

WASHINGTON, February 27, 1849.

TO FREEMAN HUNT, ESQ., *Editor of the Merchants' Magazine:*

My Dear Sir:—I have endeavored, with some considerable solicitude, to ascertain who are likely to compose the new cabinet; but, such has been the wise discretion of the Presieent elect, that we hear nothing but vague rumors, as ephemeral as they are unreliable. It is admitted by all, even by the knowing, that thus far the General makes a good beginning, and this is appreciated as a satisfactory type of coming events, giving rise to a general opinion, that the gentlemen to be selected will represent important sectional interests, possessing, at the same time, the entire respect of their fellow-citizens, for the liberal and enlightened views they entertain, in relation to the national policy. There seems to be no suspicion that the President will allow himself to be trammelled, or embarrassed, through the influence of any mere party considerations, nor is it imagined he will admit or tolerate the least shadow of dictation, having determined to act on the conviction, that the most prudent course for him to pursue, with regard to his own reputation and convenience, will be to encourage and bring forward commanding talents, avoiding as much as possible, and consistently with good faith, those who have heretofore occupied prominent positions, as advocates of ultra doctrines. It is said to be his fixed purpose to protect his cabinet from the insidious influences of internal rival collisions. In order to guard the measures of the government from assuming any other than a national character, he should rest on the integrity and enlightened patriotism of Congress, entertaining no doubt that there will eventually exist the most perfect harmony between the legislative and executive branches of the government.

As these impressions gain strength and confidence, the best informed especially those most anxious for the success and endurance of our institutions, seem to feel a sanguine hope that the financial and political prospects of the country will continue to improve, honestly believing, under the influence of certain well-devised practical modifications of the Sub-Treasury and the Tariff, that the former may be enabled to operate with greater freedom, and the latter prove as beneficial to the interests of the people and government, as it now is to the government alone, and through the influence of such modifications, secure a more perfect sentiment of union, harmony, and the conservative spirit of American nationality, than now exists.

To repeal either, or both these great national measures, could not fail to create a bitter renewal of the old party strife. Such indiscretion would immediately give rise to a question of principle, feigned or real, in which expediency and truthfulness are forgotten, surrendering place to passion and prejudice, through which the industrial portion of the population, the democratic masses, are most sure, ultimately, to suffer. The friends of the coming administration can have no motive to make any changes, beyond such as are absolutely necessary; such, in fact, as those who have lost favor would, but for a matter of pride, be most willing to concede, as essential ingredients to the perfection of their own measures. There is certainly no more important truth,

in the every day experience of the world, than that constant vacillation in public and private affairs, leads to inevitable mischief; and while acting with this knowledge, familiar to the humblest intellect, ought we not to anticipate that prudential considerations will dictate the adoption of a course of premonitory tolerance. If the Whigs will submit themselves to be judged, by the honest intelligence of the people, they will not only have the satisfaction to merit respect, but they will, by presenting such evidences of moderation and integrity, create in the public mind a high sense of propriety, which must and will exercise a future salutary controlling influence. They will then discover what is very little unerdstood, that while the American people often improvidently and illy bestow their confidence, there still preponderates the great preserving talisman of the nation—its universal good sense—the sober second thought. It is not an uncommon boastful remark, that we are above and entirely independent of foreign opinion; but, with all due deference to such bigotry, I would respectfully suggest, as due to our national importance and moral influence among the mighty political family, that we should cultivate a love of good fellowship, a longing desire to be distinguished for the most scrupulous probity, persevering consistency, and enlarged views of political economy. If such should be our prominent national sentiments, we shall have created a tribunal of public opinion, fully competent to test the relative value of theories, when compared with the established evidences of practical experience. If we may judge by the vicissitudes which attend our legislative councils, the rapid revolutions of political life, and the absolute disregard which has been exhibited for constitutional law and organization, we can easily foresee the prospective necessity for the introduction of some radical change in our legislation. To say that members of Congress do not hold themselves responsible to their constituents, or that they willingly neglect to perform their duties, would be to censure without reason, but that the country has just cause to complain of the waste of valuable time, all will admit, which, when lost, estimated on the dogma of Grecian wisdom, is the most expensive extravagance.

To what end, and for what purpose, should we get rid of the sub-treasury? It has, thus far, with all its faults and trials, done its duty faithfully. The country has passed through an unexpected war, involving an immense expenditure of treasure, without wavering; and with similar soundness in the movements of our monetary affairs, we have with perfect regularity and calmness preserved ourselves through a period of great speculative excitement. In my judgment, had we been deprived of the controlling interference of this power, a wild scene of ruinous extravagance would have been exhibited, which, like the mania of 1839, would have terminated in general and disgraceful bankruptcy. The system has acted conservatively, through the natural force of its inherent power to check expansion. The importation of twenty millions of dollars, the price of our breadstuffs, would have inflated the currency to such an extent, had the banks been at liberty, that, by this time, we should either have failed to perform our contracts, or have returned to Europe double the amount of specie we extracted. The sub-treasury kept down the value of foreign merchandise to specie

prices; and in the ratio of its influence, in regulating our home market, were our merchants enabled, those, at least, who were moderate in their expectations, to make fair and profitable voyages.

Notwithstanding the gold fever of California, while it draws from the Atlantic some of the most valuable of our population, and brings to our shores, in anticipation of large profits, the rich products of foreign industry, we nevertheless see and feel that there is in active operation a restraining and restricting supervision. If the consumption does not meet the supply, the depository becomes plethoric, and in the ratio of its extra collections, restrains the paper issues to the criterion of a limited metalic basis. We either take the goods at a sacrifice, stopping importations, or reshipments must follow on account of their owners. This check is constant and immediate; its accumulations cannot be concealed or disguised; there can be no deception or evasion; and should the banks disregard its salutary admonitions, they would soon find their solvency in imminent danger.

If the head of the treasury should be authorized to check freely on the deposits, to discharge the indebtedness of the government, or to transfer credits, to suit the convenience of the department, the sub-treasury system would be relieved of an important embarrassment; and, if to this should be added the issue of certificates of deposit to the public creditors, or the admission of transferable credits, on the books of the sub-treasuries, every facility would then be afforded, in accommodation of the legitimate business of commerce. In these simple modifications, there would be no material increase in the volume of circulation, while the specie, in deposit with the government, would be more advantageously and conveniently represented; and being so relieved, the substantial objections to the system would be essentially removed.

In this country and in Great Britain, the state of the foreign exchanges has been considered a fair evidence of the condition of the bullion market; but with what propriety this has proved a reliable criterion, we can only judge or form an estimate by the many, and apparently unforseen, repetitions of fiscal panics. This dependence on the current of exchanges has ever proved fallacious. When they are supposed to be favorable, they lead to immediate bank expansions; and when, running counter or adverse, the mercantile public become immediately alarmed, then each individual and monied institution acts on the exclusive principle of self-protection.

The influx into the sub-treasury not only gives timely warning, but materially operates to produce a healthful state. If the importations be excessive, the deposit increases, and the banks, losing their specie, have necessarily, from prudential considerations, to curtail their discounts; and as a consequence of this strictiveness, prices fall, and remittances become limited. Though the rate of the exchanges may decline, through the pressure, still, remittances are made with reference to the stringency.

The Tariff.—If we may judge from the reluctance with which this subject is approached, there is good reason to believe that there exists an important difference of opinion, among the members of both parties, how far it is expedient to interfere with its operations. It is

certain, since the free trade doctrines have been in practice, that the public revenues have increased, and it is equally true, the commerce of the country has been materially expanded. If these are the real signs of prosperity, there can be no cause to complain; and while the foreign exchanges evince a balance of trade in our favor, they would seem to be substantial. In thus stating the case, the apparent evidences are in favor of the tariff of 1846; and yet there can be no doubt, that since it has been in full experiment, many of our most valuable domestic enterprises have become embarrassed. There is also this further fact, in favor of our present experience, that almost every shipment made to the United States, is extremely profitable, especially those from France; and to such an extent has this been realized, that the fear of any change in our policy is the daily subject of solicitude to the official representatives of that country.

In order to be entitled to a wish, on our part, for a continuance of this peculiar and extraordinary state of our foreign commerce, we ought to be satisfied that there exists a perfect reciprocity. It is not enough that those who are immediately engaged in the business of importation, are making successful speculations. We must look further, for the purpose of ascertaining whether the aggregate is beneficial to the whole. The history of Portugal shows that a similar commercial era existed, when large fortunes were amassed, by British merchants, during a period of thirty years, from 1697 to 1726, when upward of $500,000,000 of gold were withdrawn; and in 1754, when it was discovered that the whole amount of specie did not exceed $4,500,000, the celebrated Duke of Pombal perceived the necessity of extending protection, and, as a medium of relief, created mercantile corporations, with manufacturing privileges. Is it not possible that this may be our approximate condition? The immense amount of gold imported in 1846, increased by a large demand for our government stocks, has kept down the exchanges, and for the present sustains this adverse trade. There can be no doubt that every article of American produce is extremely depressed, and compared with the value of 1846, scarcely yields a moiety. If we were to consult the treasury returns, we might be led to believe that our exports were beyond the imports; but, when we reflect that the export invoices are generally made high, on which no duty is paid, and that those of importation are rated low, to avoid the payment of the highest per centage, we must come to the conclusion that the official statistics are little more than vague representations.

But, whether there be any force in these statements or not, one thing is most certain, that the price of money is extravagant, and that most of our valuable manufacturing establishments are prostrate. The cotton, woollen, and iron business is in a most lamentable condition, and in a corresponding manner are our agriculturists, farmers, and planters suffering. In every direction, our operatives want employment, and mining has ceased to be remunerative. These are facts which cannot be questioned. They are matters of general knowledge, such as speak without equivocation, and prove that, whatever may be the flattering theory of free trade, experience will bring us down to practical results.

It would be well to bear in mind the state of commerce, previous to the passage of the act of 1842; because, by so doing, we shall discover our foreign trade to have been precisely the counterpart of that which is now officially esteemed an extraordinary state of prosperity. If Congress and the community would take counsel by the past, the evil day might be avoided; but, if they do not, I venture to predict that we will soon perceive symptoms of distrust.

Notwithstanding the millions which have been expended in the erection of iron works, it is an extraordinary fact that there exists but one unfinished contract for railroad bars, which contract is strictly enforced because of the superior quality of the American manufacture. In excuse for this disregard of our home industry, we have the stale apology that there should be no restriction placed on the consumer; but, when we examine into the practical beauties of this theory, every individual might say that he would not pay taxes, because he required no government. In order fully to comprehend the rights of the community, as independent of the individual, it is but necessary to remark, that the sum paid for a ton of domestic iron, is the aggregate compensation of a great variety of labor. In order to produce this ton, we employ miners of ore and coal, the yield of our own soil, and through the whole progress of completion, American labor and capital are sustained; while, on the other hand, if we neglect this cardinal interest, the joint product of almost every industrial pursuit, we become the patronizers of foreign labor, capital, and enterprise, to the exclusion of our own.

Through this long letter, you will perceive that I hold to no ultra points. Abstractions, in my judgment, very wisely lead to investigation, but, in practice, they never can stand without the support of auxiliary assistance. So with moral and political associations; the doctrines of socialism, universal love, and common property, have no reality as the elements of strength, combination, and prosperity. I am, however, a substantial believer in the effective preservative policy of the sub-treasury; and I would look to the advent of a national paper currency, based on the hypothecation of stocks, as the certain road to ruin.

I will now finish with a suggestion, perhaps as novel as in the onset it will be unpopular; but, being practical and of easy execution, it may merit the most serious consideration. I thus venture to deliver my views for what they are worth, under a full sense of the delicate obligation we all and individually owe to each other and to the country, not to interfere with subjects and controversies purely sectional, unless there exists a reasonable prospect of rendering an efficient service, private or public. It cannot be disguised that the slavery question, to which I allude, has assumed a shape and interest at home and abroad, which calls on every one, associated with the excitement, maturely to weigh and deliberate, not only the motive with which he acts, but what is to be the probable result. To take any other view of this peculiarly embarrassing matter, would evince a predetermined disposition to seek the end, heedless of the consequences. It certainly does not evince any regard for the true principles of philanthrophy, to press forward an event, either through the desire to indulge

the kindest feelings, or to advance some plausible political assumption, where the issue may lead to the most indescribable atrocities; and to such an extent may this mischief propel itself, that those who are now instrumental in bringing it about, may, in turn, become the avengers of scenes of the most savage barbarity. I will press this phase of the subject no further, leaving to the good common sense of those who feel a conservative disposition to measure and reflect on the whole matter with humanity, and in a spirit of mutual and reciprocal fellowship.

It is probable that those who are most urgent in precipitating abolition, would risk throwing the country into a civil, and with its inevitable attendant, a servile war, to gratify a morbid propensity to interfere with interests which do not immediately, or, at least, do not directly affect them, and of the nost insidious and dangerous of these disturbing elements we may rank the recent political crusade, the sudden and extraordinary revelation of the obligatory duties of a sectional free soil patriotism. I have been through the south, and visited the Island of Cuba, observing with solicitude the state and condition of the colored population, and in addition to these opportunities for inquiry, I have sought, with much assiduity, every means of acquiring information, as to the effect and influence of emancipation in the West Indies. I may be mistaken; I may have formed a wrong estimate; but my uniform conviction has been, that a state of dependence and reliance on the forecast and providence of white supervision is essential and necessary to the comfort of the blacks. I know there are exceptions to this general conclusion; but they are like the dark spots on the sun, they do not invalidate the material truth. There are, however, exceptional practices among the blacks, but even these are not universal, which might and ought to be restrained, but which can only be eradicated through the superior social influence of their more fortunate neighbors.

In the West Indies, where emancipation has been proclaimed with the loud and clarion voice of liberty, those who work are most indifferently compensated, irregularly employed, their families entirely dependent on the pittant remuneration received for their industry; while those who seek service, but to satisfy the immediate wants of nature, live in a state of the most wretched indigence. To such an extent was the universality of indolence and improvidence in the favored and wealthy island of Jamaica, that it become necessary to import, at the public expense, as apprenticed labor, the re-captured negroes on the coast of Africa, and even this extraordinary means of acquiring agricultural substitutes has proved a complete failure. The island of Jamaica, like almost every other similarly free, has fallen from the highest state of prosperity into the most serious embarrassments. What is the situation of the anomalous republic of Saint Domingo, but a spurious experiment at civilization. The government is a despotism, and the people nothing better than the vassals of power; and the experiment here, of civil liberty, was ushered in through the most diabolical exhibitions of fiendish atrocity. If there was a crime unknown to revolutionary France, St. Domingo could have furnished the illustration. Men, women and children were

abused, polluted, and sacrificed; and there are those who sought the United States, in such wretchedness, as an asylum, who cannot recall to their recollections the dangers they passed without shedding a sad and melancholy tear on the prospects of those who may be similarly exposed.

As an aggregate, the southern slaves are in a much more contented state, subject to fewer wants, solicitudes, and privations, than populations claiming to be civilized. The serf subjects of northern Europe are sold with the soil, bound with it, through curbs and difficulties they have neither the knowledge or presentiment to appreciate. If, for argument, it should be admitted that slavery were abolished, and this without reproducing the calamitous results which have attended corresponding experiments, is it not morally certain that the most enterprising and capable would seek employment where the tariff of labor is best understood, and then what would be the result? Would it not terminate in producing a perfect derangement of the remunerative resources of well regulated industry? To the southern emigrant it would be ruinous; and to those who are left behind, having lost an owners' care and their natural dependence, the change would not be less disastrous. The Utopianism of the prevailing philanthropy would soon find a novel field of distress for their sympathy, when political ambition would rail against those who have produced the issues of abolition as the worst enemies of the country.

Let us now examine this subject in another phase. Let us see whether there may not be some pecuniary and political considerations worthy the souud, deliberate attention of statesmen and men of business. Is it not true, that to the confederation we are indebted for the independent power and influence we possess? and if so, has not this desirable and enviable state been produced through the combined industry, productions, and enterprise of each and every section of the United States? There are none who will dispute these positions, while there may be some who will doubt that the great substratum of our prosperity, political, commercial, *agricultural*, and manufacturing is essentially the fruit of southern climes and from southern labor. If it had not been for the devoted patriotism with which the Union has been held together, what would have become of the north, deprived of the rich resources of the south? It was worth a high bid from Great Britain to effect a severance of the confederation, and but for her short-sighted policy she would have extended an insidious liberality to the southern planter, instead of indulgence to the eastern States during the last war. To the wealth we have accumulated from the European consumption of cotton, rice, and tobacco, do we owe our general prosperity; and but for these great staple commodities, our power over the wants of the transatlantic labor would dwindle down to a mere rivalry. Take away from your control the incidental rule you possess over the industrial pursuits of Great Britain, and her free trade doctrines would be limited to partial favoritism.

I do not mean to infer that our connection is an exclusively one-sided affair. On the contrary, I know that we are reciprocally and intimately dependent on each other, that we could not separate without mutual injury, nor could we exist in friendly intercourse with

separate governments. The issue of such an effort would be fatal, and after a long, painful, protracted collision, we might come together without sympathy, with the loss of character, and our best interests prostrate.

In this view of this most serious matter, the proposition I now make would, I foresee, lead to those gradual changes and ameliorations which we all must desire, and with mutual compromise and concession should endeavor to produce. In several sections of the country, emancipation is anxiously desired; and, but for the interference of rude interposition, it would have been long since effected. It would be encouraged in those portions of the country where white labor could be safely and advantageously introduced. The north should look well to the result; there is a powerful difficulty to be encountered; the intelligent philanthropist of the south could feel justified in throwing black labor on its own resources, in collision and in connection with the more skilful and provident industry of the white. The colonization society, in despite of its best efforts, and the liberal patronage of the public, meriting the respect of the highest feelings of humanity, is, nevertheless, impotent, as a grand source of relief, while, through the appliances of its organization, it may be enabled to render the most beneficial services; but of this there may be some doubt, as it may be apprehended that Liberia is the beau ideal of the proper scene of action.

Based on their expectations of rendering a great national service in the settlement of free blacks, let Congress establish a territorial government on the Pacific, located in some genial climate, where the soil is easily cultivated, limiting and restraining the emigrant population to the locality selected; we should then have an accessible and practical, an attractive and convenient theatre for colonization. The enterprise of the country bids fair to afford a rapid and easy intercommunication, which would convey thousands at less expense and danger than hundreds now cost. It is needless to talk of the growing prosperity of Liberia, the civilizing influence on the native African. It is but a drop of comfort to our necessities; and addicted to idleness and improvidence, the African brood, in its native aboriginal home, is unsusceptible of exertion.*

To the Pacific emigration would flock. Those who parted from the

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* Although we approve of the suggestion respecting the colonization of the free blacks on this continent, yet we are of the opinion that no territory embraced within our present limits, can be permanently appropriated to that purpose; it is all susceptible of being inhabited by the white race, and no human law could protect the negroes in its possession against the laws of nature. Their home is under the burning sun of the tropics—establish them there in moderately fair circumstances, and the white race will no longer encroach upon them. Their establishment in that region, as a civilized people, is necessary to the full and complete development of the resources of the entire continent, and this event is not less certain in our opinion than the laws of nature. When the proper time arrives we shall doubtless be able to make satisfactory arrangements with some of the governments of Central America for their migration thither. Indeed we are not aware that there is now any inhibition to the emigration of blacks to that region, and we believe that they are entitled to all the privileges and immunities of the white race, both political and social.—[Editors.

land of their nativity would not feel that they were breaking the strong ties of relationship, nor the hope, the pleasurable hope, of reunion on the territorial soil of the country of their adoption. In thus raising a colony of our colored population on our western shores, we should soon find that the expense of the establishment would be fully remunerated; while, in so doing, we could in sound and wise policy declare Liberia free, abandoning it to the fate consequent on its independence. We require no foreign settlements; they always produce trouble; and, independent of their extravagance, they assume certain national positions tending to create embarrassments with foreign powers.

Respectfully yours,

ALEXANDER HAMILTON.

ART. V.—SCOTTISH AGRICULTURE.

BY G. B. DAVIDSON, OF ILLINOIS.

The design of the writer—the land, how owned—how divided and leased—average rent per acre—expenses over and above rent—changing from small to large farms tends to reduce the price of labor—social condition of agricultural laborers—mode of farming—rotation of crops—kind of crops—time of ploughing—cleansing and manuring.

In giving an outline of the Scottish system of farming, our object is not to lay down a plan for the farmers of the Mississippi Valley—we do not propose to call upon the American to imitate the Scotch agriculturalist. Our object is to invite the American farmer, and American citizens generally, to investigate and apprehend the causes why land is of more value in Scotland than it is in Missouri, or any of the western States; and having discovered the reason, to inquire whether the means are attainable, whereby cultivated land in this country can be enhanced to the value of land in Great Britain. In what we are to submit, therefore, for the consideration of the readers of the "Western Journal," we shall first show how the land holders dispose of the land, or what relation the people generally, sustain to the soil; and secondly, the mode of culture; observing, in what we have to say, the utmost possible regard to brevity.

The land in Scotland is not owned by the farmer; it is all in the hands of what is called the aristocracy—or the *gentlemen* and *noblemen*—known as lairds, dukes, earls, lords, &c., &c. Some own only small quantities, and some have incomes of from fifty to one hundred thousand pounds per annum. These landlords divide their estates into farms of from twenty to five hundred acres, and lease for a term of years, (generally nineteen,) to the highest bidder. This system of leasing is admirably calculated to raise the rent to the very highest

point. The farms to be leased are advertised for some time previous to the day appointed to receive offers, when the factors, and sometimes the landlords also, receive in great secrecy the propositions of the several applicants. No one knows what another bids; consequently, the fear of being unsuccessful, prompts the applicant to make a high offer; and a few short years not unfrequently reveals the miserable effects of the system—the successful competitor, on these occasions, often ending in bankruptcy. The rent, of course, varies, according to the quality of the soil, and other internal circumstances; but we have yet to learn of land being rented at less than five dollars per acre per annum. And we wish the American farmer could see the barren moors and bleak mountain leases, for every acre of which five dollars is annually paid. Good land near a city, will readily rent for from fifteen to twenty-five dollars per acre yearly; and some patches, for horticultural purposes, will even rent as high as one hundred dollars. We should suppose a fair average estimate of the yearly rent of each acre of cultivated land in Scotland, to be about fifteen dollars. This is exclusive of land in, and attached to cities, which, of course, is much more valuable.

In addition to the amount per acre, the tenant has to pay from eight to twelve per cent on the capital expended on houses, also, on all fencing done by the landlord; and moreover, if such property depreciate in value, either by accident or natural decay, the tenant is bound, at the end of his lease, to make good the deficiency to the landlord.

Formerly, say in the days of our old grandmothers, a great part of the land in Scotland was divided and sub-divided into small 'crofts,' of a few acres; consequently, there was very little hiring for agricultural purposes, except by the landlords themselves, and their factors. But of late years the landlords have adopted an entirely different policy. They have almost done away with the numerous small farms or *crofts*, and as much as possible, laid out their estates into farms of large size; so that a man must be able to command considerable capital before he can become a tenant; in order to procure cattle and things necessary to carry on his business. The up-rooting of those small farms, as a natural consequence, threw a great number of people out of homes, and also out of employment. And where could they be found? For the former, they must go to the village; and for the latter, they must look to the landlord's tenant, who must necessarily employ help in proportion to the size of the farm he occupies. The number required in this way, however, is far short of the supply, and consequently, receive but little remuneration. The farmer's expenses, in this particular, is but a mere item. The very best hands can be had at from ten to twelve pounds sterling, a year; and frequently not more than eight and nine is paid. Females can be employed for much less, say at an average of three pounds ten shillings, a year; and for many purposes, such as hoeing, making hay, &c., they are considered almost equal to a man.

In connection with this part of the subject, we may add, that the social condition of the agricultural laborers is far from enviable. There is no time for amusement or mental culture; but toil on from day to day, from week to week, and from year to year. In fact, as a

general thing, the farmer, in his own sphere, is more of a despot than the landlord. On many farms, the servants are not allowed to enter the house in which the farmer resides. They live in what is called a "*bothey*," a small place, prepared for the purpose; and receive as board seventeen and a half pounds oatmeal per week, and one pint of milk per day. This is the allowance for a man—women and boys one-fourth less.

From the preceding remarks, the reader will be able to form a pretty correct estimate of the annual expenses of the Scotch farmer; and no doubt many will ask, how is he able to pay? At any rate, they may suppose that, after paying such a high rent, he might be allowed to farm, and dispose of his produce according to his own notion. But such is not the case. The landlords have made certain regulations, and procured the enactment of certain laws, restricting the sphere of the farmer's operations to certain modes, and within certain limits. In some instances neither hay, straw, turnips nor fodder of any description, is allowed to be removed from the farm which yielded it; and in no case are such articles allowed to be removed from one landlord's estate to another, unless manure to a corresponding amount is purchased, and applied to the farm from which such articles are removed. Besides, the farmer must only sow a limited number of crops in a piece of ground, the object being to prevent the tenant, towards the end of his lease, from exhausting the soil, by neglecting to manure and excess of cropping—a most salutary provision.

Let us now attend a little to the particular mode of farming—a mode, it will be observed, which not only enables the occupant of a farm to pay a heavy rent, but by which the land is kept in good health and condition, and not suffered to depreciate in value, or fail in productiveness.

Farms are divided into five, six, or seven equal divisions, called shifts, according to the quality of the land—a farm of rich soil being divided into five only, while one of poor soil is divided into seven. The reason is, that the rich soil can stand more cropping, while the poor soil requires more time to rest in meadow, or what, in Scotland, is called "lea;" the former having but one year in five, the latter three years in seven. By noticing the rotation of crops, this will appear more obvious. A farm of five shifts has one shift in meadow, one in green crop, and three in small grain, wheat, oats, barley, &c. A farm of six shifts, has also three shifts in grain, and one in green crop, but *two* shifts in meadow; while the farm of seven shifts has still the same number of shifts under crop, but *three* shifts in meadow. The order of farming is to plough up a shift of meadow every year; consequently, on a farm of five shifts, the meadow is ploughed up when a year old; and where there are six shifts, it is ploughed up when two years, and where seven shifts, when three years old.

The first business which engages the farmer, after harvest is finished, is to plough his meadow, so that the winter frosts may act upon the mould. Experience has proved that ploughing meadow, before the winter set in, not only uniformly produces a more abundant crop, but from ten days to two weeks earlier; which is a matter of no small importance in that country. Where land is of an inferior quality, mea-

dow is generally manured previous to ploughing; but, where the soil is rich, it is not necessary to manure meadow, except for a wheat crop. This, however, is seldom the case, as wheat is generally the last crop when the land is put into meadow. Of course, there are exceptions to this rule, as there are many places where the soil is too poor to produce wheat. Oats is generally the first crop after meadow. The second is partly oats, partly rye, partly peas and beans, and partly barley, according to the notion of the farmer. Some may only sow one or two of those articles, and some will sow a little of every one. If barley should be decided on as the second year's crop, the land must first be well manured; otherwise, the crop would not be worth harvesting. We may add, that the land is ploughed about two inches deeper for the second crop than for the first.

When two crops of grain are thus taken, the land must undergo a thorough cleaning and manuring; and, when this is done, nothing but a green crop, as it is called, can be raised. Green crop consists of potatoes, turnips, and beans, if planted in drills, so as to admit of hoeing. We shall describe, particularly, the process of cleaning and manuring, as it is the most important of Scottish agriculture.

The land, as we have said, bears two grain crops after being broke up out of meadow. The piece of ground to be cleaned is then ploughed as soon as convenient after harvest. It is ploughed very deep, from ten to twelve inches; but, where land has a cold, unproductive bottom, a subsoil plough is used, in which case, the top furrow is not more than six or seven inches deep. In this state the ground remains till spring, when it is again ploughed cross-ways, well harrowed, and the weeds all gathered off. This done, it is once more ploughed and harrawed; and, if any weeds should remain, they are again gathered off. If any clods should remain after this process, the ground is rolled with a heavy stone roller, till no clod is left unbroken.* It is next formed into drills of about thirty inches wide. In the hollow thus formed between the drills the manure is deposited; and, if the crop is to be potatoes, the seed potatoes are placed on the top of the manure, and then covered over with earth.

This is done by splitting the drills first formed, and forming the drills right over the manure. If turnips is to be the crop, the manure is covered in the same manner—the seed is then sown on the top of the drill with a machine made on purpose; consisting of two light wooden rollers, the one for leveling the top of the drill, the other for closing the groove made by the cutters for the reception of the seed. Nothing more is necessary till the plants come up, when the ground is harrowed between the drills, with a harrow made on purposs, called a drill harrow, which uproots every thing coming in its way. After harrowing, hoeing commences; the superabundant plants are all cut out; not a particle of any growth is overlooked; every weed and blade of grass is cut down. This process is repeated two or three times, as the case may require; when a little before harvest, the turnip operations are finished by furrowing up the earth to the roots. This last process, however, is not necessary where land is dry; but

*Meadow is ploughed six inches deep.

in wet land it is indispensable. The Scotch farmer has more expense, more labor, and more trouble every way, to raise turnips, than any other crop he puts in the ground. This, then, we may call the *third* crop after meadow, and if the farmer should not desire such a crop, or only part of a shift in such a crop, the remainder of the shift must be fallowed.

A farmer who raises wheat, generally sows it after green crop; the ground being well manured and free of weeds. As soon as the potatoe crop is dug up, the land is ploughed, and the fall wheat sown. If more land is required for wheat than the patch occupied with potatoes, the turnips are removed and put in pits for winter use. What is not sown in this way, of the green crop shift, and in places where no wheat is raised, is sown in the spring with barley or oats, as the case may be. This is the *fourth* and last crop after meadow. Grass and clover are now sown, and the following year it rests from the plough.

Such is the order of rotation sacred to the Scottish agriculturalist. In our next, we shall notice the various kinds of manure in use—the price, preparation and application; together with a few remarks on stock raising, &c., &c.

AGRICULTURAL AND HORTICULTURAL DEPARTMENT.

AGRICULTURAL CHEMISTRY.

The following is the eleventh number of a series of excellent articles on agricultural chemistry, which have appeared in the American Agriculturalist, over the name of J. M'Kinstry, of Greenport, Columbia county, N. Y. The subjects treated in this number are, doubtless, familiar to all who have made themselves acquainted with Liebeg, Johnson, and others; but as we imagine that many of our readers have hitherto taken little interest in agricultural chemistry, we publish the article with a hope that it may be the means of calling their attontion to one of the most pleasing departments of natural science. We have designed writing a series of articles on this subject, but have hitherto been deterred from doing so by the little interest which the farmers of the west seem to take in every thing connected with their pursuit, except that which relates directly to the labor required to produce an article, and the price which it will bring when made ready for market. We are fully aware that so long as the rich virgin soil of the west continues to produce a redundancy of all the marketable

staples, it is useless to talk with farmers about the improvement of their soil, or their system of agriculture. But, still we might reasonably suppose that they would not the less delight in the science of agricultural chemistry and botany, as sources of mental enjoyment.

Mr. McKinstry has treated the subject throughout in a style so plain and familiar, that a child may comprehend it; and we are persuaded that his essays will be the means of exciting a more general interest in a subject not less delightful than profitable.—[EDITORS.

In describing the various parts belonging to plants, it is essential, in order to obtain an easy and perfect comprehension of the subject, to have the attention directed to some particular member of the great vegetable family, and after becoming well acquainted with that, you can easily apply the description or character to any other, as there is a remarkable correspondence between them all. In the largest plants, we may expect to find the different organs most distinctly developed. I will, therefore, select a *forest tree* as the most fit embodiment of those organs common to nearly all vegetables. In examining a tree, three parts at once present themselves for investigation, namely, the root, the trunk, and the leaf.

1. *The Root.*—The office of this is to give the tree a firm support in the soil, to extract nutriment for its supply, and to return to the earth such matter as has been separated from the nutritive part of the food. Roots absorb liquids by means of the fine, spongy texture of their extremities, which act as mouths, and imbibe the moisture that surrounds them. I say they absorb *liquids*, for we have no proof that solid matter, although reduced to the finest powder, can gain admittance, nor that gases can enter except when combined with liquids. But all liquids are not admitted, for the root seems to possess a discriminating power, which enables it to reject such aliment as would be injurious or devoid of nourishment; just as animals, by their sense of taste and smell, are the roots enabled to distinguish wholesome and unwholesome food. There are, I admit, exceptions to this statement, for roots will imbibe brine and many other liquid substances, not congenial to the nature of plants, just as an animal may be made to swallow arsenic by mixing it with its food; but this no more proves that the root has no discriminating power, (as some contend,) than the fact that animals may be made to eat poison proves them to be without taste or smell. As brine and other poisonous solutions which roots have been made to absorb, are not common to the soil where they grow, it was not necessary that nature should endow them with the power of rejecting such substances; for she is a good economist, and does not furnish either plants or animals with such faculties as are not of general use. We cannot, in the present state of science, define the nature of this selecting power which roots possess, but numerous experiments have proved its existence.

I mentioned that the root possesses another power—that of returning to the soil such matter as is not required by the plant. This is called the *excretory power*. Some writers on this subject deny its existence, while others not only contend that roots have this power,

but also assert that the matter which they return to the soil is detrimental to the succeeding crop, providing it be of the same kind, though not injurious to any other kind of plant. This theory was evidently formed to explain the reason why the same kind of produce does not thrive when repeated for a succession of years, or in other words, to account for the advantages of rotation. But, while we admit that the roots of plants have an excretory power, I do not think we have any good reason for believing that the matter excreted has any influence on the succeeding crop. I will explain the advantages of rotation in a subsequent letter, and, I trust, on more philosophical principles than any contained in the above hypothesis.

2. *The Trunk, or Stem.*—We will now direct our attention to the stem, or trunk. The several parts belonging to this, with which you are familiar, are the *bark*, the *wood*, and the *pith*. The bark, or outer covering, may be easily separated into two portions—the outer called the *epidermis*, the inner, lying next to the wood, the *liber*. The sap, or juice, in its descent, flows through the liber, as will be presently described. The woody part of the trunk is usually found to consist of two portions, differing in appearance; the inner portion is called the *heart*, and is commonly of a brownish color; the outer, enclosing this, is called the sap wood, or *alburnum*. The pith is of a spongy texture, sometimes occupying a considerable space in the centre, as in the elder, but more frequently small, as in the oak, maple, &c.

You may have observed in the ends of logs sawed transversely small white lines, running from the centre to the circumference, or from the pith to the bark, like spokes in a wheel. These are called *medullary rays*. They are composed of a similar substance as the pith, and seem to form a medium of communication between the pith and bark, though for what purpose is not known. Although these medullary rays appear like mere lines running across the end, they in reality extend through the whole length of the trunk, dividing both heart and sap wood into distinct sections.

The parts, or divisions of the trunk, above described, are such as are apparent without minute observation; but a closer inspection discloses small cells, or tubes, extending lengthwise through the trunk, and arranged in groups, or bundles. Through these channels the sap flows, passing in its ascent through the tubes of the alburnum, and in its descent through those of the liber and bark. In that portion of the trunk called the heart, the cells have become mostly filled and closed with solid matter, so that but little juice can flow through them. The heart, therefore, is the more firm and solid portion, and on that account the more valuable for mechanical purposes, where strength and durability are required. In all ex-tropical trees, the palm family excepted, a new layer of wood is formed every year next to the bark, which forms a ring around the trunk, easily recognized in most trees, when cut or sawed across; their age may be readily ascertained by counting these rings, or layers.

3. *The Leaves.*—These are very important organs, as they prepare the juice for the office it performs in forming new wood, and thus promoting the growth of the tree. Their office, in this respect, may

be compared to that of the lungs of animals, for the lungs in like manner prepare the blood for its destined purpose.

The leaf is connected both with the wood and the bark of the twig to which it is attached; its fibres communicating with the woody part of its stem, while the green part of the leaf may be considered as an expansion of the bark. The tubes, or cells, which I have described as extending through the alburnum and liber, pass into the leaf and diffuse themselves through its substance. Now there are two sets or layers of these vessels, the one spread along the upper, the other along the under surface of the leaf. Those along the upper surface come from, and connect with, the wood or alburnum, and those along the lower surface connect in like manner with the vessels belonging to the bark or liber. The vessels, running through the leaf, communicate with the air by means of innumerable pores, which permit the escape of vapor, or admit the entrance of carbonic acid, as the case may require. It is supposed, (I know not on what authority,) that the office of the pores on the upper surface is to allow vapor to escape, while the absorption of carbonic acid, (and perhaps other gases,) is performed by the pores of the lower surface.

The Course of the Sap.—The juice, when first absorbed by the roots, is unfit for the purpose of nutrition. Its upward passage, as I have before said, is through the tubes of the sap wood, and these tubes are connected with those passing into the leaf. The sap, in its ascent, is slightly changed, though not materially, until it reaches the leaf, when it is exposed to the action of light and air, and reduced in quantity by the evaporation of a part of the water it contained. It is made thicker and somewhat mucilaginous or gummy, by parting with a portion of its water. Its chemical character is also changed by the action of the atmosphere, as well as by that of light; carbonic acid is drawn from the air, and it returns through the liber, carrying with it a large portion of this gas. Now, in what manner the carbon is separated, or how it is that those chemical changes are performed, by which the materials contained in the juice are converted into wood, fruit, or seed, I cannot inform you. Some may satisfy themselves by saying these changes are produced by a *living principle* in vegetables, but this explanation is far from being satisfactory, and leaves us in doubt and darkness as to the nature of this *principle*, and the manner in which it acts. But, what causes the motion of the juice? Why does it rise contrary to the force of gravity? This question concerning the motion of juices in vegetables, like that of the circulation of blood in animals, has given rise to much speculation, and to many theories. One method of explaining the ascent of sap is, by supposing it to be the result of capillary attraction; another, and the one adopted by Liebig, (See American Agriculturist, vol. vii, p. 276,) is that the evaporation from the surface of the leaves produces a vacuum, (an empty space,) in the upper part of the tubes, which causes the fluid to rush in from below, on a principle similar to the one by which water is forced upward in a pump; others again have resorted to the *vital principle*, (a term hard to define,) but there are weighty objections to all these theories. The one adopted by Johnston appears more satisfactory, although it must be admitted that

this rather *illustrates* than *explains* the fact—just as the falling of an apple illustrates without explaining the force of gravity. It is as follows:—

Take a metallic tube open at both ends; over one end tie a piece of bladder, and into the other pour some water saturated with sugar, and immerse the lower end (that over which the bladder is tied,) in some pure water. The water will penetrate the bladder, rise in the tube, and run out at the top, and continue running out until the water within, and that without the tube, contain nearly the same proportions of sugar. Now sugar is a common ingredient in the juices of plants, and the above experiment may be made with several other substances which are found in vegetable juices. Is it not, then, highly probable that those liquids which the roots of plants imbibe, are drawn up through their small tubes on this principle? Neither capillary attraction, nor the production of a vacuum by evaporation, nor the indescribable vital-principle hypothesis, will account for the ascent of the water in the tube in the above experiment. Yet, while we admit that the chemical force by which the water is made to ascend in the tube is the principal one in causing the ascent of the sap in trees, I do not know that there is anything unreasonable in supposing that it may be aided in plants by capillary attraction, and also by evaporation from the leaves. This indeed seems quite probable when we consider that water can only be made to rise a few feet in our metallic tube, while in trees it is sometimes drawn upward of a hundred feet or more.

In my next letter, I will describe some of the most important of the compounds belonging to vegetables. J. McKINSTRY.

Greenport, Columbia Co., N. Y., Feb. 1st, 1849.

HYBRIDIZATION AND CROSS FECUNDATION OF PLANTS.

FROM THE AMERICAN AGRICULTURALIST.

Hybridization, strictly speaking, is the art or act of obtaining an offspring or progeny between two different species of animals or plants; and *cross fecundation*, or *cross breeding*, is the production of a progeny or race between varieties of the species. It was maintained by Buffon, Hunter, and other naturalists of the last century, and is yet assumed by many scientific men of the present day, that the hybrid offspring or progeny of two distinct species of animals or plants is incapable of begetting or reproducing its kind; thus making hybridity the test of specific character. From this we may infer, that the progeny of hybrid plants cannot produce seeds; but that produced by cross fecundation may be regarded as fertile.

The observations and experience of practical gardeners and florists

would seem to justify the following maxims, as affording some guide to the production of new varieties or races:

1. The existence of sexes in plants is now universally acknowledged as occurring in the same flower—in separate flowers on the same plant or tree—as well as in those of trees distinct from one another.

2. Plants nearly related, that is, closely similar in the structure of their several parts, are those only which will immediately impregnate with each other; but it is impossible, at present, to say what families of plants may or may not be brought into fertile union through intermediate crosses. Not long ago, the azalea and rhododendron were thought to be incapable of such union; but this opinion is now exploded; for the Pontic rhododendron, (*R. ponticum,*) has been fecundated with the pollen of the Chinese azalea, (*A. sinensis,*) and the progeny between that evergreen and the last named deciduous-leaved shrub, is the previously unknown phenomenon, a yellow rhododendron. In like manner, the brassicas, (cabbages, turnips, &c.,) mix freely with brassicas in all their gradations, as well as the cucurbitaceæ (melons, pumpkins, gourds, &c.) There are some exceptions, however, to this rule; for the beautiful pelargonium and the scarlet geranium, though nearly allied, according to the classification of modern botanists, have not, hitherto, been able to mix. Again, the raspberry and strawberry are regarded as first cousins; yet, after several attempts, they have not hybridized. The gooseberry and currant, too, are nearly related; still their alliance seems invincible, though tried by skilful hands.

3. The color of the future blossoms, (not of those first hybridized,) seems to be most influenced, though not invariably, by the male plant, if its seeds and flowers are darker than those of the female. Mr. Knight found, that when the pollen of a colored-blossomed pea was introduced into a white one, the whole of the future seeds were colored. But, when the pollen of a white blossom was introduced to the stigma of a colored blossom, the whole of the future seeds were not white. Captain Thurtell, from lengthened observation and experiment, also informs us, that he has always found the color and spot of the petals of the pelargonium to be more influenced by the male than by the female plant. On the contrary, however, he observed that the form of the petals follows most closely that of the male plant.

4. Large stature and robustness of habit, according to Mr. Knight, are transmitted to the progeny by either of the parent plants. Therefore, it does not absolutely matter, for obtaining this characteristic, whether the plant, male or female, be large; but he generally found that the most robust female plant produced the finest result. When a good fruit or culinary vegetable is wanted, he recommends that the largest seed from the finest fruit or plant, that has ripened earliest, and most perfectly, should always be selected. In stone fruits, if two kernels are in one stone, these give birth to inferior plants. The florists of the present day, however, are opposed to Mr. Knight in their practice, as regards the hybridization or cross fecundation of ornamental flowers; for they recommend the weakest plants, and those that germinate last, where chastity of form and beautiful marking are

required, to be taken the greatest care of, as they are sure to produce the most valuable flowers.

Mode of Obtaining Varieties.—The most successful mode of obtaining good and very distinct varieties, is to employ the pollen of a male flower, grown on another plant, from a distance, and not that bearing the female, or that in which the fecundation is to take place. When the plants are in flower, carefully extract with a pair of sharp pointed scissors the anthers, if any, from the female flower from which you intend to produce seed, and also destroy all male flowers, or those having anthers, of the same species that are in the immediate vicinity before they arrive at maturity, or your attempts will be of no avail; for nature will have performed her part, and instead of a hybrid, you will have a natural progeny. In order further to avoid previous and undesired impregnation, the female flower should be inclosed in a case covered with gauze, and thus continued until the process of hybridization is complete, to exclude insects, and the effects produced by strong currents of air before the desired pollen is ripe. Another effectual mode of preventing undesired impregnation, is bringing the female plant into flower a little earlier than its congeners, and removing the anthers as directed above. For the stigma will remain vigorous, if unimpregnated, for several days.

After extracting the anthers from the flower you wish to bear seeds, carefully watch the progress of the stigma, and as soon as you find it in a condition to receive the pollen, select the matured anthers from a distance, and bring them in gentle contact with the stigma, to which a sufficient quantity of pollen will adhere. If a double flower should chance to have a fertile anther or two, these should be employed for fertilization, as the flowers of their progeny will almost be sure to be double. Although the fecundity of all the seeds in one seed vessel may be secured by applying pollen only to one style, even where there are several, yet the quantity of pollen is by no means a matter of indifference. Koelreuter found that from fifty to sixty globules of pollen were required to complete the impregnation of one flower of Hybiscus siriacus; but in Mirabilis jalapa, and M. longifolio, two or three globules were enough; and, in case of pelargoniums, Captain Thurtell says two or three globules are certainly sufficient.

In the course of the process, the seed vessel is not altered in appearance, by impregnation, from that of another plant; therefore, no hasty conclusion of failure is justified by that want of change. It is easy to discern, however, whether the fecundation has been effected; for, when this is the case, the stigmas soon wither. The stigmas which have not received the pollen, remain for a long time vigorous and green.

M. Haquin, a distinguished horticulturist at Liege, has impregnated flowers of the azalea with pollen kept six weeks; and camellias with pollen kept sixty-five days. He gathers the stamens just before the opening of the anthers, wraps them in writing paper, places them in a warm room for a day, collects the pollen they emit, and preserves it in sheet lead, in a cool dry place. Mr. Jackson, of Cross-Lane Nursery, near Bedale, states that he found the pollen of Rhododendron

smithii tigrinum to retain its fertilizing power even for twelve months. This property of pollen was verified by experiment, in Persia, by the elder Michaux, as early as the year 1782, in observing that the male flowers of the date, (*Phœnix dactylifera*,) will keep during the year, and yet impregnate the female. D. J. B.

New York, Feb. 3d, 1849.

WIRE FENCES.

Among the many improvements in agricultural economy, there are few that promise results of more general interest than wire fencing. They appear to be growing into favor in almost every part of the country, and bid fair to supersede wood and live fences in every part of the country where timber is not very abundant. Should this mode of enclosure be generally adopted, it will open a new demand for iron that will be equal, perhaps, to all others in point of quantity. We copy the following article, describing the size, weight, and cost of wire from the American Agriculturalist:

Since the publication of Mr. Peters' article on wire fences in our January number, numerous inquiries have been made relative to the size, weight, and cost of wire, where it may be had, &c. &c. For the benefit of those who are interested in this subject, we have taken special pains to construct the following table, which is based on reliable facts, obtained from several importers and wire dealers of this city:

Class of wire.	Diameter in hundredths of an inch.	Weight per lineal rod.	Weight per lineal mile.	Retail prices per pound.
No. 1	0.32	4 lbs. 2 oz.	1321 lbs.	$0 09 cts.
2	0.30	3 " 10 "	1166 "	0 09 "
3	0.27	2 " 15 "	944 "	0 09 "
4	0.25	2 " 8 "	809 "	0 09 "
5	0.24	2 " 5 "	746 "	0 09 "
6	0.22	1 " 15 "	627 "	0 09 "
7	0.20	1 " 9 "	518 "	0 10 "
8	0.18	1 " 4 "	419 "	0 10 "
9	0.16	1 " 0 "	331 "	0 10 "
10	0.15	0 " 14 "	291 "	0 11 "
11	0.13	0 " 10 "	219 "	0 11 "
12	0.12	0 " 9 "	186 "	0 11½ "
13	0.10	0 " 6 "	159 "	0 12½ "

If wanted in large quantities, 25 per cent. would be deducted from the prices above. There is a great difference in the quality of wire, and those unaccustomed to its use are liable to have an inferior article imposed upon them. It is better that the wire be galvanized or annealed, as the fences will endure from fifteen to twenty years without injury from the weather. For galvanizing the wire, or coating it with tin, the cost will be only 2½ cents per pound in addition to the usual prices.

CULTURE OF THE OSAGE ORANGE.

A FARMER, writing for the Louisville Journal, says:

A tolerably rich piece of ground should be chosen for a seed-bed or nursery, which should be well prepared by deep and thorough ploughing and harrowing.

About the middle of April is the most suitable season for planting. The seed should be placed (not more than two quarts together,) in a vessel of water, in a warm situation. They should soak for thirty-six hours, or longer, if more than a year old. The water should then be turned off, and the seed remain in the vessel for six or eight days, and stirred once or twice each day, to prevent fermentation or heating. They should then be planted in drills about one inch deep, and as thick as peas are usually planted. The rows should be thirty-six inches or three feet apart, to admit of the passage of the cultivator. In covering, it is best to raise a sharp ridge, say one inch high, immediately over the seed. This is done with both hands, drawing the fine earth from each side. This will keep the seed in case of dry weather, or, if wet, prevent the ground from baking over them. The seed should be examined after a week, and, when vegetation commences, the ridge should be brought to a level with a fine rake. This eradicates any young weeds that may have started, leaving the ground clean and mellow.

If the plants are well cultivated through the season, they will average two feet high by fall.

In the fall, the ground for the hedge-row should be ploughed four feet or more wide, and again ploughed in the spring to a depth of one foot, and harrowed. In planting, which should be done in March, or as early as the season will admit, the roots should be shortened to ten or twelve inches, and the tops cut nearly level with the ground. It is best to plant them in two rows, fifteen inches apart, and twelve inches in the rows, putting a plant opposite the middle of the space in each row. The ground should be kept clean and mellow during the season.

In the following spring, the shoots should again be shortened to within ten or twelve inches of the crown of each plant, and the rows cultivated as before. After which, they will require frequent shortening with shears made for the purpose, to give the proper form to the hedge.

Although the Osage Orange may be propagated from the cuttings of the roots, yet they will not be found troublesome by sprouting when broken by the plough.

No soil is better suited to the growth of the Osage Orange hedge, than that of the "Barrens;" and, if properly managed, it will answer the purpose after the fourth year.

CHANGING THE BEARING YEARS OF APPLE TREES.—Mr. R. Manning, of Salem, Massachusetts, (than whom no better authority need be desired, as he is at once competent and truthful,) states that, by

cutting off *all* the blossoms from a Baldwin apple tree, in the spring of its bearing year, he changed the fruitful year to the following one, and, as a consequence, that the *un*fruitful seasons have become bearing years, and *vice versa.—American Farmer.*

WESTERN TOWNS.

PEORIA, ILLINOIS.

The following statistics of this interesting and thriving city, are taken from the Peoria Record, of March 5th, 1849, published by S. D. W. Drown.

As is the case in most interior towns, there is no method of ascertaining the accurate amount of exports or imports at Peoria; but the publisher says, "the exports as far as can be ascertained from the different houses, may be set down at above half a million of dollars," for the year 1848. A part of this goes north, by the canal, and part south by the Illinois river. It would be an interesting fact in the commerce of the west, could we know what portion of the exports of Peoria goes north, and what south; and we trust that this fact will appear in the next annual report of the commerce of that city. The leading articles of export consists of pork, wheat, corn, flour, whisky, lard, &c. It appears that there are nine pork packing establishments, at which 26,572 hogs were prepared for market, besides 1,400 slaughtered and packed by Mr. Thomson, which were fatted at his distillery.

There were 60 steamboats employed in the Illinois trade, as high up the river as Peoria, with an aggregate tonnage of 9,622, carpenter's measure, and 1,166 arrivals of steamboats—an increase of nearly 300 over 1847, besides the arrival of 496 canal boats. The navigation closed on the 11th December, 1848, and opened from Peoria to St. Louis, on the 8th of March, 1849.

Of *manufactures and the mechanic arts*, the publisher says:

"The steam flouring mills, distilleries, and pork packing establishment, give employment to 11 coopers' shops, employing in all about 60 hands.

"Mr. Thompson, at his distillery, pays out for materials and labor, about $4,000 annually. The past season he consumed 60,000 bushels of corn, rye and barley, 40,000 bushels of coal, fatted 1,400 hogs, made 4,700 barrels whisky, employing twelve hands in the distillery, ten hands at coopering, and at six at digging and hauling coal.—expending about $500 per week. Whisky principally sold at St. Louis and Chicago.

"A. S. W. Goodwin's candle, lard oil and soap factory, has not quite come up to last year's business, for the reason of meeting with

some opposition by individuals complaining to the city authorities, declaring his establishment detrimental to the health of the citizens. He has, however, presented the following statement: Manufactured into candles 33,898 lbs of tallow, into lard oil 96,480 lbs of lard, making 4,020 gallons of oil. Also, slaughtered this winter for farmers from the country, 2,286 hogs; rendered 464 barrels lard, and 112 barrels steam lard. He usually manufactures about 40,000 pounds of soap in the spring.

"The past season there was added to our manufacturing establishments a white marble grave stone manufactory, by Messrs. Kent, Jewell & Co., in which are employed fifteen hands, at an expense of about $100 per week. The freight alone on the marble slabs from the quarry in Dorsett, Vt., via. the lakes and canal, was $1,265. Some as beautiful work is done at this establishment, as can be found any where in the eastern States.

"Wagon makers, (we have seven establishments,) are extensively engaged, and especially at this time, fitting out our "Pioneer" and "California" companies of gold diggers, and this naturally gives good employment to our blacksmiths, of which there are fifty or more. Also, there are a number of cabinet, bedstead and chair factories, pretty extensively patronized; the bedsteads disposed of the present season, amounted to about 925, principally from the shops of Messrs. Kearns & Bryner, and Fridley & Lincoln.

"There are a greater number of mechanical arts carried on in this, than there are in many other cities of the west, such as founderies, wood and iron turning, (we have two or three such,) where all kinds of iron turning is done for horse or steam power machinery. An additional factory of wind or fan mills, in which seven hands are employed, has been started within a few months. There has been manufactured the past season, at the two old establishments, 375 mills, distributed in the surrounding country, and still the call is for more. They calculate treble that number the coming season will be made.

"The plough factories are still extensively patronized. Messrs. Toby & Anderson employ sixteen hands in their establishment, and have turned out for home and foreign markets, 1,600 ploughs. Peter Sweat & Co. employ nine hands, and have turned out 900 ploughs the past season."

There were erected, in 1848, 72 frame and 53 brick buildings, besides two churches. The whole number of stores and dwellings in the city, is 825. There are nine churches, one Methodist Episcopal, one Old School Presbyterian, one Baptist, one Congregational, one Protestant Episcopal, one New Jerusalem, one Universalist, one Roman Catholic, and one German Lutheran. There is also a society of Campbellites, or Disciples, and perhaps one or two other societies.

The population on the 1st of March, was 5,061, and by the following table it appears that the number has more than doubled in five years and two months:

The following table will show the population of the city from 1844 to the present time, with the increase in each year:

Years.	Under 20.	Over 20.	Total.	Increase in each.
January 1, 1844,	805	814	1619	000
" 1845,	972	962	1934	315
" 1846,	1136	1256	2392	458
" 1847,	1522	1492	3014	622
" 1848,	2327	1752	4079	1035
" 1849,	2622	2439	5061	979
		Increase in population for 5 years,		3409

Perhaps the most interesting feature in the statistics of Peoria, is the table showing the place of birth of the heads of families, and the unmarried men of age to vote. These are valuable facts, and will be quite as interesting many centuries hence as they are at present; and we should be pleased if not only all the western towns, but the States likewise, would make it the duty of those who take the census, to ascertain the plaee of birth of all their citizens.

There are in Peoria 1,261 heads of families and men unmarried; these come from 36 States and Kingdoms—about one-third are foreigners—218 of the number were born in New York; 163 in Germany; 161 in Pennsylvania; 114 in Ohio; 93 in Ireland; 73 in Massachusetts; 68 in Virginia; 67 in England; 38 in Kentucky; 34 in Connecticut; 33 in Maryland, and so on through almost every State in the Union and every nation in Europe; only seven of the whole number being natives of Illinois.

WESTON, PLATTE CITY AND PARKVILLE, PLATTE COUNTY, MO.

We are indebted to the enterprising and public spirited editor of the Frontier Journal, published at Weston, Missouri, for the following account of Platte County and its Towns.

It is refreshing to find in a western newspaper something else than politics, and the disgusting accounts of moral delinquency which seem to be so eagerly sought after by newspaper publishers throughout the land. Many of these accounts which are copied perhaps in more than a hundred newspapers, relate to subjects that no parent who has the least sense of propriety or delicacy, could permit to be discussed or mentioned in his family; and yet they pay for a newspaper that caters for appetites that would degrade the inmates of the calaboose. Let parents reflect upon this. It is in their power to correct this scandal upon the moral taste of the community if they will; for if a few would withdraw their patronage and assign this as the reason, such publications would soon cease to appear in the public journals. This rebuke may appear out of place, but in publishing the statistics of Weston and other towns in Platte county, we deem it our duty to

notice the Frontier Journal, and to recommend it to the patronage of all who wish information respecting the resources of that which may be considered the most interesting portion of the Valley of the Mississippi.

Platte county constitutes the southern portion of what is known as the Platte country. The Platte country derives its name from the Platte river, by which it is traversed from north to south. It was added to the State of Missouri by an amendment of the constitution, ratified by the General Assembly at its session in the winter of 1834–'35, and subsequently assented to by Congress.

Upon the extinguishment of the Indian title, Platte county was speedily overrun by settlers from all parts of the United States. Without the color of title to their lands, but each claiming as much as they saw proper, it is not strange that the most unamiable relations existed among the inhabitants.

The pre-emption acts of 1838, 1840 and 1841, granted inchoate titles to a large proportion of the settlers, but it was not until the spring of 1843, that, by the establishment of the land office at Plattsburgh, the pre-emptioners were able to perfect their titles by entry. In the course of eighteen months nearly all the lands of the county were entered. The payment of nearly $300,000 by the citizens of the county, who were already in an impoverished condition, caused the most distressing pecuniary embarrassment. The price of every commodity was reduced fully one half. It required several years to revive from this depression; but the day of prosperity has come at last, and Platte is now the second county in the State in point of population, wealth and commercial importance.

Weston, situated on the Missouri river, with a population, according to the late census, of 1,309, is the most important commercial town in the county. There is, perhaps, more produce shipped from Weston, than from any other port on the Missouri river. It is surrounded by one of the finest bodies of land in the world, and by as industrious, intelligent, and thriving a population of farmers as the west affords. Its business, formerly largely wholesale, is now almost exclusively retail. Its prosperity is, therefore, the more substantial. No commercial vicissitude can deprive it of its trade; but, as the wealth of the county grows, the business of the place must increase. About $200,000 worth of merchandise is annually sold in Weston. Two extensive packing houses are busily employed during the packing season.

From this port, as will presently appear, the produce of the county is principally shipped.

Platte City, the seat of justice of the county, is situated at the falls of Platte river. The court house is a spacious building, erected at the cost of $13,485. The lattice bridge across the Platte river, with a single span of 160 feet, and double track, was built at the cost of $13,464. The Platte river is here precipitated twelve or fifteen feet over a ledge of rock, affording abundant water power. A superior flouring mill has lately been erected, and next season a large quantity of flour will be sent to the St. Louis market.

Parkville is situated on the Missouri river, at the mouth of the Platte. It is now a small village, but is fast improving and growing into importance. Its situation commands the shipping business for nearly one-half the county of Platte, as well as parts of Clay and Clinton. New Market and Ridgley are small interior towns.

The following table will exhibit the shipments of produce from the county during the year 1848, distinguishing the amounts shipped from Weston and Parkville respectively.

	From Weston.	Parkville.	Other points.	Total.
Hemp, tons,	1,577	280	55	1,912
Wheat, bushels,	23,953	6,574	1,643	32,170
Bacon, casks,	1,070	68	60	1,198
Pork, barrels,	828	00	00	828
Lard, barrels,	1,602	92	40	1,734
Lard, kegs,	83	34	00	117
Tobacco, hhds.,	121	28	00	149
Peltries,	1,840	80	00	1,920
Hides,	943	106	50	1,099
Beeswax, sacks,	26	6	00	32
Castor Beans, sacks,	59	12	00	71
Tallow, barrels,	10	00	00	10
Flaxseed, sacks,	20	3	00	23

In the above table are not included the corn, oats and beef furnished Fort Leavenworth, the oxen, mules and horses sold to government and Santa Fe traders, the produce of all kinds sold to indians, the beeves that have been driven eastward in quest of a market, &c. All included, we may set down the home value of the produce of Platte county, exported in 1848, at $500,000. Next season the shipments of produce of the county will doubtless be increased. Flour will become an article of export, shipments of wheat will probably reach 50,000 bushels, and the hemp crop is estimated at 2,200 tons.

COMMERCIAL STATISTICS.

COINAGE OF THE UNITED STATES MINT IN 1848.

In the last number of the Western Journal, we published a complete statement of the annual coinage of the United States, from 1792 to 1847, inclusive. The following table, which we take from the Merchants' Magazine, is abridged from the annual report of R. M. Patterson, Esq., Director of the Mint, recently communicated to Congress:

At Philadelphia,	in gold,	$2,780,930
"	in silver,	420,050
"	in copper,	64,158
	Total,	$3,265,138

[Number of pieces coined, 8,691,444.]

The deposits for coinage amounted to, in gold, $2,584,460; in silver, $466,732.

At New Orleans,	in gold,	$358,500
" "	in silver,	1,620,000
	Total,	$1,978,500

[Number of pieces coined, 3,815,850.]

The deposits for coinage amounted to, in gold, $183,360; in silver, $1,659,774.

At Charlotte, North Carolina, the amount received during the year for coinage, in gold, was $370,799. The coinage amounted to $364,330—composed of half eagles, 64,472, quarter eagles, 16,788.

At Dahlonega, Georgia, the amount received during the year for coinage, in gold, was $274,473; amount coined, $271,752½—composed in number of, half eagles, 47,465, quarter eagles, 13,771.

The deposits at the four mints during the year, amounted in all, to $5,539,598.

In gold,	$3,413,092
In silver,	2,126,506

The coinage amounted to—

In gold,	$3,775,512½
In silver,	2,040,050
In copper,	64,158
Total,	$5,879,720½

PRICES OF BAR IRON IN LIVERPOOL FROM 1817 TO 1849.

The following statement of the *selling* price of merchant bar iron in Liverpool, has been prepared with very great care, and shows some of the most remarkable facts in the history of trade.

On the introduction of railways into general use, railway bars, at first, commanded a price varying from £1 10s. to £2 per ton. During a few past years, ordinary rails have been furnished at a shade only below the quotation price of merchant bar.

	PER TON.		PER TON.
1817—February,	£8 10	1818—February,	12 15
March,	9 10	April,	11 15
July,	10 10	May,	11 5
August,	12 00	June,	10 15
October,	13 00	August,	10 00

	PER TON.
September,	11 10
December,	12 10
1819—May,	11 10
June,	11 00
1820—March,	10 10
June,	9 10
1821— "	9 00
1822— "	8 10
1823— "	8 00
1824—January,	8 15
July,	9 15
September,	10 00
October,	11 00
"	13 10
"	10 00
November,	12 10
December,	13 00
1825—January,	14 00
February,	15 00
March,	14 10
April,	14 00
August,	13 00
"	12 10
September,	11 10
1826—January,	11 00
April,	10 10
May,	9 10
October,	10 00
1827—March,	9 10
1828— "	8 00
1829— "	7 00
1830— "	6 00
1831— "	6 00
1832— "	5 10
1835—February,	6 5
September,	7 00
October,	7 10
November,	8 00
December,	8 5
1836—January	10 10
April,	11 10
July,	11 5
October,	11 00
November,	10 15
December,	10 10
1837—February,	10 5
March,	9 15
May,	9 00
June,	8 10
July,	7 5

	PER TON.
August,	6 15
" 15,	7 5
" 19,	8 00
" 31,	8 15
September,	9 10
December,	9 12
1838—January,	9 10
December,	9 15
1839—January,	10 5
May,	10 00
June,	9 15
September,	9 10
1840—January,	9 00
December,	8 00
1841—April,	7 15
1842—January,	6 10
December,	5 5
1843—April,	5 00
June,	4 10
1844—January,	4 15
March,	4 15
April,	5 5
August,	5 15
October,	5 15
December,	5 15
1845—February,	8 00
March,	10 10
April,	9 10
May,	9 10
July,	8 10
1846—April,	9 00
August,	9 00
November,	11 00
1847—January,	10 10
April,	9 10
July,	9 15
August,	9 8
December,	8 5
1848—January 4,	8 00
" 28,	7 00
February 25,	7 15
March,	7 00
April,	6 15
May,	6 5
June,	6 00
October,	5 10
November,	5 5
December,	4 15
1849—January 15,	5 5

Barring Brothers say, in their circular of 23d February, 1849: Iron continues in good demand, and the makers are firm at £8 per ton for common bar, and £5 15s. @ £6 for rails, free on board in Wales. In Staffordshire, prices have advanced 10s. per ton. Scotch Pig, on the Clyde, has been dealt in largely, from 22s. to 23s. per ton for mixed numbers; and Gartsherrie is held at 55s.

IMPORTS OF IRON UNDER THE TARIFFS OF 1842 AND 1846.

The Secretary of the Treasury, according to instructions, sent to the House of Representatives a return, showing the different kinds and value of articles of iron imported, and duties received, since the enactment of the tariff of 1842, of which the following is a summary:

Statement showing the value of iron, and manufactures of iron and steel imported under the tariffs of 1842 *and* 1846, *and the gross amount of duties received thereon.*

From—	Value of art's paying ad val. duties.	Val. of art's paying specific duties.	Total imports.	Gross amount of duties received.
1st Oct. '42, to June 30, '43,	$734,737	$1,161,121	$1,903,858	$902,054 84
For year ending June 30, '44,	2,782,137	2,445,365	5,227,502	2,477,342 35
" " " " '45,	4,169,745	4,125,121	8,294,866	3,672,141 66
" " " " '46,	4,069,829	3,750,590	7,820,428	2,868,787 65
July 1, '46, to Nov. 30, '46,	1,796,428	1,315,397	3,111,825	1,050,579 56
Total,	13,552,876	12,805,603	26,358,479	10,970,906 00

UNDER THE TARIFF OF 1846.

	Val. of art's pay'g ad val. duties.	Total imports.	Gross amount of duties received.
From Dec. 1, 1846, to June 30, '47,	$5,669,427	$5,669,427	$1,690,511 40
For the year ending June, 1848,	12,526,854	12,726,854	3,736,223 20
Total,	$18,196,281	$18,196,281	$5,426,734 60

IMPORTS OF COAL INTO THE UNITED STATES,

UNDER THE TARIFFS OF 1842 AND 1846.

The following is a statement exhibiting the quantity and value of coal imported under the tariffs of 1842 and 1846, together with the amount of duty which accrued on the same, prepared in obedience to a resolution of the House of Representatives, of the 14th December, 1848:

	Tons.	Value.	Rate of duty per ton.	Duties.
From Oct. 1, 1842, to June 30, '43,	41,163	$116,312	$1 75	$72,035 25
Year ending June 30, 1844,	87,073	236,963	1 75	152,377 75
" " " 1845,	85,776	223,919	1 75	150,108 00
" " " 1846,	156,853	378,597	1 75	274,492 75
From July 1, to Nov. 30, 1846,	66,272	157,636	1 75	114,226 00
Dec. 1, 1846, to June 30, 1847,	82,749	213,349	30 per ct.	64,004 70
July 1, 1847, to June 30, 1848,	196,251	461,140	"	138,342 00

Note.—The tariff of 1842 commenced operating August 30, 1842, and the tariff of 1846, December 1, 1846.

The following table, exhibiting the amount of imports and exports from 1821 to 1848, is taken from the report of the Secretary of the Treasury. It will be perceived, from this report, that the excess of imports, exclusive of specie, during the fiscal year ending the 30th June, amounted to $16,787,361. This excess, less the balance against this country, of $945,745, was made up by the export of specie. We have no means of ascertaining how the account stands for the current year. But the amount of duties received for the first quarter, ending on the 30th September, was $8,991,935 07; more than the quarterly average of the preceding year.

There is little doubt that the exports of the current year will fall short of the last; and it is evident that, unless our importing merchants are governed by a prudent forecast, a severe revulsion must ensue.

The article under the title of "Commercial Chronicle and Review," in the Merchants' Magazine, for March, 1849, holds out a most flattering prospect for the business of the present season. Speaking of England, the writer says: "American produce is again selling freely, at higher prices, and every element of prosperity is in action."

The accounts of the English market, which have reached us during the current year, are certainly the reverse of this. The elements of prosperity may be in action in England, but we cannot believe that this prosperity will increase the price or demand for American grain or flour.

It is not our intention to write a review of this article at present. But, the least we can say of it is, that, in our opinion, the writer proceeds upon assumptions that are fallacious, and that his views are calculated to mislead those who may be governed by them.

Statement of the total imports, and the imports consumed in the United States, exclusive of specie, during each fiscal year, from 1821 to 1848; showing, also, the domestic and foreign exports, exclusive of specie, and the tonnage employed during the same periods.

Years.	Total imports.	Imports consumed in the United States, exclusive of specie.	Domestic produce exported, exclusive of specie.	Foreign merchandise exported, exclusive of specie.	Total exports.	Tonnage.
1821 (to Sept. 30,)	$62585724	$43696405	$43671894	$10824429	$64974382	1298958
1822 do.	83241541	66305673	49874079	11476022	72160281	1324699
1823 do.	77579267	51310736	47155408	21170535	74699030	1336566
1824 do.	80549007	53846567	50649500	18322605	75986657	1389163
1825 do.	96340075	66395722	66944745	23793588	99535388	1423112

1826	do.	84974477	57652577	52449855	20440934	77595324	1534191
1827	do.	79484063	54901[illegible]8	57878117	16431830	82324827	1620608
1828	do.	88509824	66975505	49976632	14044578	72264686	1741392
1829	do.	74492527	54741571	55087307	12347344	72358671	1260798
1830	do.	70876920	49575099	58524878	13145857	73849508	1191776
1831	do.	103191124	82808110	59218583	13077069	81310583	1267847
1832	do.	101029266	75327688	61726529	19794074	87176943	1439450
1833	do.	108118311	83470067	69950856	17577876	90140433	1606151
1834	do.	126521332	86973147	80623662	21636553	104336973	1758907
1835	do.	149895742	122007974	100459481	14756321	121693577	1824940
1836	do.	189980035	158811392	106570942	17767762	128663040	1882103
1837	do.	140989217	113310571	94280895	17162232	117419376	1896656
1838	do.	113717404	86552598	9556 88[illegible]	9417690	108486616	1995640
1839	do.	162092132	145870816	101625533	10626140	121028416	2096479
1840	do.	107141519	86250335	111660561	12008371	132[illegible]85946	2180764
1841	do.	127946177	114776309	103636236	8181235	1218518[illegible]3	2130744
1842	do.	100162087	87996318	91799242	8078753	104691534	2092391
1842 (to December 31— 3 months,		21584599	12431376	25895151	1713112	28125493	2174862
1843 (January 1 to June 30—6 months,)		43169200	24862753	51790903	3426223	56230987	2158603
1844 (from July 1, 1843, to June 30, 1844,)		108435035	96390548	99531774	6214053	111200046	2280095
1845 (to June 30,)		117254564	105599511	98455330	7584781	114646606	2417002
1846	do.	121691797	110048859	101718042	7865206	113488516	2562085
1847	do.	146545638	116258310	150574814	6166[illegible]39	158648622	2839046
1848	do.	154977876	127490012	130203709	7986806	154032131	3150502

DANIEL GRAHAM, Register.

TREASURY DEPARTMENT, Register's Office, Dec. 4, 1848.

ILLINOIS AND MICHIGAN CANAL.

THE President of the Board of Trustees, has addressed a circular letter to the stockholders, containing an interesting and highly satisfactory exhibit of the affairs af the Company.

The Chief Engineer states in his report for the present year, that all the work upon the main line of Canal is fully completed, according to the original intention of the Board, except three inconsiderable items, the whole cost of which is stated at $3,000. The cost of completing the Canal and feeder was $1,401,192 79, leaving in the hands of the trustees of the loan of $1,600,000, advanced by the stockholders to supply the deficiency of means on the part of the State to complete the Canal, the sum of 198,808. The Canal was opened for navigation in the latter part of April, 1848, and the first boat which passed through the whole extent of the line arrived at Chicago on the 23d April. The number of boats on the Canal registered and licensed previous to the 1st June, 1848, was 15 only. The whole number registered at the close of the season was 162. The principal articles transported upon the Canal, in 1848, were flour, pork, salt, fish, sugar, molasses, wheat, corn, oats, merchandise, coal, potatoes, lumber, &c. The gross income for that year was, $87,890, or $878 per mile. The Canal was closed by ice on the night of the 29th November, making, from the opening of navigation, a period of 224 days. The Canal revenue from tolls is estimated for 1849, at $120,000. The whole amount of resources for 1849 is estimated at $470,382,77; of probable expenses at $80,000; leaving upwards of $400,000, a large portion of which can be applied to the payment of the interest and to the reduction of the principal loan of $1,600,000.—[*Republican.*

MISCELLANEOUS.

RAILWAYS, NUMBER OF MILES, AND COST OF CONSTRUCTION IN DIFFERENT COUNTRIES.

The American Railroad Journal, of February 24th, contains some valuable and interesting statistics upon the subject of railroads, showing their present condition throughout the world. The following table is more fully accurate than any before published on the subject:

	MILES.	COST PER MILE.	TOTAL.
United States,	6,421	$30,000	$192,630,000
Canada,	54	30,000	1,620,000
Cuba,	250	28,000	7,000,000
Total in America,	6,725		$200,250,009
Great Britain,	4,420	145,000	640,900,000
France,	1,250	110,000	137,500,000
Germany,	3,370	50,000	168,500,000
Belgium,	495½	80,900	39,640,000
Holland,	162½	25,000	4,062,500
Denmark and Holstein,	282	40,000	11,280,000
Switzerland,	78	50,000	3,600,000
Italy,	162½	90,000	14,625,000
Russia,	113	60,000	6,780,000
Poland,	187½	50,000	9,375,000
Hungary,	157	50,000	7,850,000
Total in Europe,	10,678		$1,044,402,500
Grand Total,	17,403		$1,244,652,500

The above gives the number of miles of railroad *in operation* at the commencement of the present year—the cost per mile of their construction, and the aggregate expenditure. Within the last twenty years these seventeen thousand four hundred and three miles of railroad have been built at an expense of twelve hundred and forty-four millions six hundred fifty-two thousand five hundred dollars. And it is asserted, that the roads now in progress, including those which will be completed within the next five years, will represent an additional amount of capital equal to the sums already expended upon those that are finished.

It will be noted that the above table only comprises roads finished and in operation, while in Europe and America, thousands of miles are in progress of completion, and thousands of additional miles are contemplated and boing projected.

For instance, at the close of the year 1847, the railways built and in progress in England, Wales, Scotland and Ireland, amounted to twelve thousand four hundred and eighty-one miles, contemplating a capital of $1,567,887,000; and the whole amount actually expended on railways, to the end of September, 1848, was $837,222,000.

And in France, at the close of the year 1846, the number of miles of railway in progress and completed, was three thousand eight hundred and forty-one, requiring a capital of $416,000,000.

In Russia, also, at the end of the year 1847 there were sixteen hundred miles of railway in progress, and are being rapidly built by government, although only one hundred and thirteen miles are in operation, as stated in the above table.

And in the United States, six thousand four hundred and twenty-one miles are in operation, while the number of miles of railway in progress of completion, are comparatively greater than in the European countries above mentioned.

The number of miles of railway in actual operation in the several States of the Union, will appear from the following table:

Maine 111¾ miles; New Hampshire 263½; Vermont 91½; Massachusetts 876¾; Rhode Island 64½; Connecticut 270½. Total in New England, 1678 miles.

New York 1019 miles; New Jersey 239½; Pennsylvania 720½; Delaware 40; Maryland 252; Virginia 406; North Carolina 255; S. Carolina 204; Georgia 602; Florida 26; Alabama 111; Mississippi 95; Louisiana 50½; Kentucky 28; Illinois 53; Indiana 86; Ohio 294; Michigan 264. Grand Total, 6,421½ miles.

ELECTRO MAGNETISM AS A MOTIVE POWER.

The following is the report of the Select Committee of the Senate, presented by Mr. Benton on Wednesday week, on the application of Dr. Page for aid in testing his new invention in Electro Magnetism:

Mr. Benton, from the Select Committee of the Senate, to which was referred the memorial of Prof. Page, made the following report:

"That the memorialist represents that he has discovered a mode of applying Electro Magnetic Power for the purpose of navigation and locomotion, and as a general substitute for the dangerous agency of steam; that he has been engaged in the invention of this subject for more than twelve years, at great expense and sacrifice; that he is now able to demonstrate the availability of the electro magnetic power, as a mechanical agent, upon a scale of magnitude commensurate with his limited means; that means larger than his own would be necessary to test the availability of the power in its application to the great purposes of useful navigation and locomotion; that he deems his invention worthy of national encouragement, upon the same principle that encouragement was extended by Congress to Prof. Morse for telegraphing by electro-magnetism; and he prays that a select committee may be appointed to examine his invention, and to witness his experiments, and that an appropriaton may be made to enable him to apply his invention on a large and useful scale.

"In pursuance to their appointment, the committee attended the lectures now in course of delivery in this city by Prof. Page, on electro-magnetism, and witnessed his experiments in the application of that

power as a mechanical agent, and are satisfied that his past success with the limited means justifies the expectation of farther success from enlarged means.

"The power was exhibited, among other ways, in the suspension of a mass of iron of 50 pounds, without visible support, and in the capacity of the great electro magnet to sustain all the weight that can be crowded upon it, consisting of masses of iron and several persons, and believed capable of sustaining weight of 10,000 pounds. Its application was exhibited in the propulsion of miniature engines, and in driving an engine of considerable power by which boards are planed with ease and smoothness.

"That the power is great and can be applied to the useful purposes of navigation and locomotion, the committee see no reason to doubt. The inquiry which rests upon their mind is as to the cost of the production of this power, and whether it can be produced at a rate to justify its common use as a mechanical agent. On this point experience can be the only safe guide, and thus far experience is favorable. Dr. Page informs the committee that he has succeeded in largely reducing the cost of production, and expects to be able to bring it within the limits of an economical power, especialy when the saving of life, as well as of money, shall be comprehended under the idea of economy—safety being one of the greatest objects of his invention.

"Upon the examination of the power and applicability of Professor Page's invention, the committee deem it an object of national interest, that the entire ability be completely tested; and the sum of twenty thousand dolars being deemed necesary by him for that purpose, they recommend an appropriation accordingly, and direct the chairman to propose it as an item in the Naval Appropriation bill." The report was ordered to be printed.

COMPOSITION ROOFS.

Inquiries have been made of me, respecting the character and value of these roofs, of which a number have been laid since their introduction here in 1846. What I have to say is of general import, and will be best stated in my columns.

The usual covering hitherto, has been shingles, sheet iron, tin, slate and sheet copper. Shingles make a low priced roof, but they are deficient in durability, and are not only easily destroyed by fire, but become a means of facilitating the progress of flames from house to house. Tiles are expensive—so is slate, with the additional difficulty that they are apt to become dangerous in time of fire to those within the reach of the fragments into which they explode under the action of intense heat. Copper is also very expensive. Composition roofs, in their first cost, are not much higher than shingles, and taking durability into view, are much less expensive.

The composition is a preparation of tar and sand upon paper, which is fastened to the sheeting usually prepared as a basis for shingles. Thick and strong paper is first secured to the board, and two or three coats of prepared tar is then spread on the surface. Sand or fine gravel forms the final coat or covering.

Such a roof does not leak even when just made, and a few months serves to render it perfectly dry, and indestructible by fire.

The advantages of these roofs are,

1. Its durability. To this no period can be assigned, save that it will last as long as the house it covers.

2. The beauty it confers upon a roof. The least possible declivity serves for such a roof, as the water cannot penetrate it in the slightest degree. This is a feature which every one can see and must appreciate.

3. Its efficacy. Such a roof becomes so substantial that rain cannot in the slightest degree penetrate it.

4. Its indestructibility by fire, which has often been tested, and always with success.

5. Not least in the advantages, is the perfect foothold it affords in the surface, as well as in the slope. These roofs can be walked over in absolute safety, except when covered with sleet.

Mann & Co., whose office is in the same building with mine, put on these kind of roofs in a workmanlike manner, which has given every satisfaction to their employers. I will only add that their composition roofs are now superceding all other kinds upon the business buildings of Cincinnati.—*Cist's Advertiser.*

LAWS OF NEWSPAPERS.

1. Subscribers, who do not give express notice to the contrary, are considered as wishing to continue their subscription.

2. If subscribers order the discontinuance of their papers, the publisher may continue to send them till all arrearages are paid.

3. If subscribers neglect or refuse to take their papers from the offices where they are directed, they are held responsible till they have settled their bill, or ordered their paper to be discontinued.

4. If subscribers remove to other places, without informing the publisher, and the paper is sent to the former direction, they are held responsible.

5. The courts have decided, that refusing to take a paper or periodical from the office, or removing and leaving it uncalled for, is "prima facie" evidence of intentional fraud.

THE

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M. TARVER and T. F. RISK, Editors and Proprietors.

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THE

WESTERN JOURNAL.

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ART. I.—COMMERCIAL PROSPECTS OF 1849.

In the commercial department of the Western Journal, we have hitherto confined our labors chiefly to the collection and statement of facts, leaving our readers to form their own conclusions respecting the markets, domestic and foreign. Nor should we now have departed from our former course, but for the opinions and assumptions of some of our cotemporaries.

The agricultural staples of the United States, and more especially of the west, are limited in their production by the demand, rather than by the capacity of the country to produce them; and hence, there is a surplus continually pressing upon the market, which, like a dead weight, crushes the prosperity of the producers, and deprives them of the principal inducements to agricultural improvement. This being the case, it is natural that the attention of the political economist should be directed to the means of extending our commerce—both at home and abroad—to the end that the energies of the community may be called into more active operation. Upon a subject of so much importance, and one which requires a knowledge of so great a variety of facts, it is but reasonable to look for a diversity of opinion, not only in respect to the policy of the nation, but in regard to the commercial prospects of the season also.

Having met with an article in the March number of the Merchants' Magazine, which, in our opinion, is calculated to mislead the agriculturalists as well as the merchants, we should not do justice to the great interests which we have undertaken to promote, without examining the facts and opinions of the writer. He admits that there "are symptoms of growing speculation in many parts of the country," and yet it would be difficult for any one to write an article better calculated to aggravate these symptoms, and confirm the malady which they indicate. The writer is evidently of that school of political economists who look to foreign commerce as the only means of developing the resources of their own country, and labor continually to fix the minds of the American agriculturalists wholly on foreign markets, for the purpose, as it would seem, of preventing them from encouraging the enlargement of their own. But we will give the author an opportunity of speaking for himself, that our readers may form their own

conclusions respecting the correctness of his views. Having given a table showing the declining rates of exchange from the 1st of September, 1848, to the 21st of February, 1849, he proceeds to say:

"These falling rates, under the strength of the demand, as indicated in the above table of exports, show how great has been the influence of rising rates for cotton and produce, under increased exports, supported by the improved demand for stocks. All these afford indications of the possible reflux of the precious metals towards the United States, when the bulk of the spring imports may have been received. It will be remembered that the wants of England, in respect of breadstuffs, have been very large, notwithstanding that her crops have been good."

It is quite true that the imports of provisions and breadstuffs into Great Britain were large in 1848, when compared with years anterior to the famine of 1847; and it is but fair to conclude, that the abundance of money, and low price, will occasion an increase of consumption; but if we examine the state of our foreign commerce at the close of the year ending on the 30th of June, 1848, and recollect that the stock of breadstuffs have been gradually increasing since 1847, we shall find no reason to suppose that there is the slightest probability that a reflux of the precious metals towards the United States will take place during the present season, upon any other ground than that of being invested in American stocks.

In eleven months ending 6th December, 1847, the consumption of foreign grain in Great Britain, exceeded the quantity imported by 4,066,892 bushels. This excess was, of course, drawn from the stock in bond at the beginning of the year. But in the eleven months ending December 6th, 1848, the quantity imported exceeded the consumption by 2,811,994 bushels—flour and meal being estimated at the rate of $2\frac{3}{4}$ bushels to the cwt. Thus, at the close of the year, we find accumulating stocks, and as a natural consequence, towards the close of the winter, prices began to decline in anticipation of large imports from the north of Europe and other countries.

At Liverpool on the 9th of March, southern flour was quoted at 25s. 9d. to 26s. Western canal at 25s. to 25s. 6d. Philadelphia and Baltimore 24s. 6d. to 25s. 3d. per barrel, and on the 5th of April, according to the accounts brought by the Europa, flour was nominal at 22s. to 23s. 6d. per barrel, the latter price only obtainable for best Ohio brands. To authorize shipments at these rates, flour in New York should not cost the shipper more than from $4,25 to $4,50 per barrel, and it may well be questioned whether prices have yet reached the lowest point, although later accounts show a slight improvement. The low rates will doubtless check exportation, and when it is remembered that notwithstanding the large exportations of breadstuffs and provisions from the United States in 1848, we exported of specie and bullion $9,481,396 more than we imported, it is fair to conclude that, unless there is a falling off in our imports, we shall be under the necessity of again settling our balances by the exportation of the precious metals at the close of the season, although we may receive importations of specie during the spring months.

The foreign demand for American stocks, which has been induced by the abundance of money and low rate of interest in England, is calculated while it lasts, to support our commerce; but it constitutes a feature which should be observed with great caution, for stocks do not, nor can they ever constitute a permanent basis of trade between nations; and it is not in the nature of things that large sales of stocks can take place to foreign capitalists, without disturbing the natural and legitimate laws of trade. Every dollar of stocks sold to foreign capitalists, stands as a debt against this country, and the produce of our labor must go to pay the interest semi-annually, and it would be better that we should export specie to settle balances, than to pay them in stock bearing interest; for the laws of trade would in time return to the country the specie, and during its absence it would draw no interest.

We extract the following paragraph not because of any particular bearing which it has upon the subject under consideration, but on account of the *new light* which it sheds on the effects produced by an advance in the price of grain. The writer says, "The value of the exports of breadstuffs and provisions from the United States, as compared with the value of the same articles delivered on the Hudson river from the New York canals, is officially given as follows:—

	1846.	1847.	1848.
Export from United States, - -	$27,701,125	$68,701,921	$37,472,751
Delivered on the Hudson, - - -	30,348,790	50,302,275	33,987,012

"These figures show to how great an extent a favorable export trade swells the business of the canals, and therefore promotes the general prosperity of the whole agricultural sections. Thus the able reports of the Commisioner of Patents, Edmund Burke, Esq., than whom no gentleman has in official station, been more actively useful, estimates the wheat crop of 1847, for the Union, at 114,245,500 bushels, and the crop does not materially vary from year to year. Now from the above table, it appears that this crop, at New York prices, was worth $125,685,000, and at the prices of 1847, $171,367,750; an increase of $45,682,750. The actual value of the wheat and the wheat flour exported in that year, was $32,183,161; consequently, had that quantity been *given away*, the farmers would have gained $13,499,589 by the enhanced price which the remainder sold for at home, in consequence of taking that quantity out of market; but a large price was obtained for it abroad, and the value of the present crop, and the general prosperity, will be sustained by the same operation."

We have met with nothing for a long time that has puzzled us more than the paragraph last quoted. If we understand the writer's proposition, it is this: That the advance in the price of wheat which took place in 1847, increased the money value of the crop $45,682,750; that the actual amount exported in that year was $32,183,161; and had this quantity been given *away*, the farmers would have gained $13,499,589, by the enhanced price which the remainder sold for at home, in consequence of taking that quantity out of the market. Now, to sustain this proposition, we must suppose that the farmers sold the entire crop, leaving none for bread, or for seeding their land; and fur-

thermore, that it was all sold at New York prices. We cannot suppose, however, that the writer is so ignorant of the economy of farming as to imagine that all the wheat grown in the United States is sold by the producers, or even if it were, that the farmer receives the price which it brings in New York. The merchant, the carrier, the warehouseman, and a host of other agents, must all be paid out of the New York prices before the farmer can count his gains.

That a gain accrued to the farmers by reason of the enhanced price in the home market, there is no doubt; but to make that gain amount to $13,499,589, we must consider them to be gainers by seeding their land and eating bread from wheat valued at one dollar and fifty cents, instead of one dollar per bushel. If this be the principle upon which the writer estimates the farmer's gains, he has certainly made a brilliant discovery in the science of political economy; and if the farmers may grow rich by an advance in the price of the seed they sow, and the bread they eat, they may cease to regret the failure of the alchemists in their search for the philosopher's stone, for they have nothing to do but to sow less and discontinue their labors for a season, and the price of bread will rise sufficiently to make them as rich as their hearts can desire. But more than this—what powerful inducements does this theory offer to the exercise of that most excellent of all the virtues—charity; for in case the crops should be too abundant, the farmers have only to give away a portion to the poor of other countries, and grow rich by selling and eating the residue! This is indeed casting bread upon the waters to some purpose, and fully explains the meaning of Solomon, who doubtless comprehended the practical operation of our author's theory, for in his days gold became so abundant that silver was nothing accounted of—he made silver to be in Jerusalem as stones.

At the close of the paragraph, we are informed that notwithstanding the farmers might have been great gainers by giving away $32,183,161, in value of provisions and breadstuffs, yet "a large price was obtained for it abroad and the value of the present crop, and the general prosperity, will be sustained by the same operation;" but as prices have declined, and as the people abroad do not seem to encourage the exportation of these articles, we beg to suggest whether the farmers of this country would not act wisely in making a large donation to the poor of Europe, and thus enrich themselves at once from the home market, and the enhanced price of their bread. Before dismissing this paragraph, we beg to commend it to the most profound consideration of the farmers, merchants, and politicians of the west, for whose benefit, we suppose it to have been written.

We extract the following paragraphs, not so much for the purpose of commenting upon them, as to show the spirit and tone, which pervades the entire article.

"All the elements of a season of great prosperity continue to present themselves. Money in England is abundant, food at a fair level, labor abundant, and prices of produce and raw material comparatively low; while stocks of goods as well in England as in the countries she supplies, are by no means large, and the demand improving under confidence of continued peace and a renewed spirit of enterprise. In the

United States the outstanding credits are perhaps as small as ever before, when so great an amount of business is being transacted. Exchanges are in favor of the country, with every prospect of lucrative sales of crops that are somewhat in excess of the few past years in quantity.

"The operation of the California gold fever has been to impart a strong spirit of speculation, and to induce enterprise in all commercial countries of a character more bold than any that has marked commercial operations of the past few years."

* * * * * * * * *

"American produce is again selling freely at higher prices, and every element of prosperity is in action. The result is, that in all directions the desire to extend bank credits is manifest. In Illinois, Michigan, and Ohio paper schemes are being projected. In Pennsylvania a change in government favors the renewal of those money charters that expire in a short time; and in New York the multiplication of banks under the new law is very rapid. All these are symptoms of growing speculation; but as yet the ground is firm, the national wealth great, and the floating capital of the country never greater than now.

"The latest accounts of commercial affairs in every department in Great Britain show increasing activity and great buoyancy. Cotton was advancing slowly but surely, and sales to a large extent were made two weeks prior to the sailing of the Europa. Money continued plentiful, and first class bills were readily discounted as low as 2 per cent. The demand for United States six per cents was increasing at advanced rates. Sales had been made at 107, and the prices of the State stocks were also improving; Pennsylvania 5's were once more at 75 in London."

We have but one comment to offer upon these extracts, viz. that in our judgment the paper schemes in Illinois and other Western States, if any such exist, have originated in the scarcity of money, occasioned by a decline in the prices of produce since 1847, and are not induced by the high prices of produce and active elements of prosperity, which the author supposes to prevail in this region.

How far the gold of California will sustain the present prosperous condition of the country, we shall not pretend to predict; but we are fully persuaded, that unless the produce of gold in that region should be considerable, the flattering prospects indicated by the foregoing article, will not be realized by the American people during the present year.

The repeal of the corn laws in Great Britain will doubtless occasion an increase in the imports and consumption of breadstuffs; but it will be an increase in quantity rather than in money value, and will consequently add but little to our ability to pay for increased importations from that country.

No nation that relies upon foreign countries for a considerable portion of its bread, can prosper through an indefinite series of years, nor can it long sustain an independent position. For being dependant upon others for the primary element of subsistence, it would be continually liable to have its supplies cut off by wars, commercial revul-

sions, and other causes beyond its control; and would be compelled in time to yield to the policy of those on whom it relied for the means of existence. It remains to be seen how far Great Britain will voluntarily place herself in this dependant and perilous condition.

Many intelligent and influential individuals entertain the opinion that the farmers of the United States, can find a market in Great Britain, for all the surplus breadstuff and provisions that they can produce; and in their zeal to establish this opinion in the minds of others, they overlook many important facts that are calculated in their nature to modify such conclusions. And this inordinate zeal sometimes leads publishers of public journals into blunders so gross and palpable, that one is at a loss to decide whether they err through ignorance, accident, or design. This is especially the case in respect to the following article, which appeared recently in *Cist's Weekly Advertiser*, published at Cincinnati.

"There is a class of political economists who cannot conceive it possible for us to find a permanent market in Great Britain for our agricultural products.

"When the immense export to the old country in 1847 occured, the Atlas put it down to the score of famine, and confidently predicted that it could neither pay nor last.

"Well we have the official table of exports—Let us compare the two years.

AGRICULTURE.

Product of Animals.	1847.	1848.
Beef, tallow, hides, horned cattle	$1,905,341	$2,434,003
Butter and cheese	1,361,168	1,741,770
Pork (pickled) bacon, lard, live hogs	9,033,872	6,630,842
Horses and mules	195,195	277,349
Sheep	20,820	29,100
Wool	57,497	89,460
	$12,538,896	$11,202,534
Vegetable Food--		
Wheat	2,669,175	6,049,350
Flour	13,194,109	26,133,811
Indian corn	3,837,483	14,395,212
" meal	1,807,601	4,301,334
Rye meal	174,576	225,502
Rye, oats, and small grain and pulse	376,575	1,600,962
Biscuit or ship bread	610,090	556,266
Potatoes	86,277	109,062
Apples	88,944	92,961
Rice	2,331,824	3,605,896
	$25,187,647	$57,070,326

"It is not worth while to waste words, by way of comment, on these figures. They settle the question clearly and finally, that we shall forever find a permanent market for our surplus products across the Atlantic."

We publish the entire article as we find it, that it may be preserved as a curiosity in commercial statistics. The author has acquired con-

siderable reputation as a collector of statistics, and is often referred to as authority, and how he could commit so gross a blunder we cannot imagine. Indeed, we presume that no one but himself could guess the accident or motive that induced its perpetration. Were it not for the triumphant manner in which he declares that it is not worth while to waste words, by way of comment on these figures, that they settle the question clearly and finally, that we shall forever find a permanent market for our surplus products across the Atlantic, we might conclude that the tables had been changed through a mistake of the printer, but the remarks of the Editor most evidently have reference to the figures as they stand, for a falling off in the exports of breadstuffs and provisions from $68,272,860 in 1847, to $37,726,-543 in 1848, would not appear to settle the question so clearly and finally, that we shall forever find a permanent market for our surplus products across the Atlantic. The annual reports of the Secretary of the Treasury show that the amount of breadstuffs and provisions exported in 1848, was less by $30,446,317 than that of 1847. Most people would be apt to conclude that a falling off of nearly one-half in one year did not afford very strong grounds for such confident predictions; but Mr. Cist shows by his tables that there was an *increase* of $30,446,317, when in truth this is the amount of *decrease* as reported by the Secretary of the Treasury. Were his tables true, there would indeed, be some propriety in his conclusions. But the table, when *corrected*, does not yet show the true nature of the decline, for the falling off was chiefly in the exports to Great Britain. We have made up the following tables from the report of the Secretary of the Treasury, to show the amount of provisions and breadstuffs exported from this country to the United Kingdom of Great Britain, in the years ending on the 30th of June, 1847 and 1848.

EXPORTS OF PROVISIONS TO GREAT BRITAIN IN 1847.

Beef, tallow, hides,	Value,	$1,269,975
Pork, bacon, hams and lard,		3,471,597
Butter and cheese,		1,209,277
Total provisions,		$5,950,849
Grain.		
Wheat, bushels,	2,544,563	3,599,949
Flour, barrels,	2,457,076	15,104,574
Indian corn, do.	15,536,515	13,750,310
Rye meal, do.	5,292	34,977
Rye, oats, other small grain and pulse,		631,902
Biscuit or ship bread,		164,322
Potatoes, bushels,	3,337	2,827
Rice, tierces,	48,619	1,222,232
Total breadstuffs,		$37,874,075
Total of provisions and breadstuffs,		$43,824,924

EXPORTS OF PROVISIONS AND BREADSTUFFS TO GREAT BRITAIN IN 1848.

Provisions.		
Beef, tallow and hides,		Value, $806,204
Pork, hams, bacon and lard,		5,283,259
Butter and cheese,		821,839
Total provisions,		$6,911,302
Grain.		
Wheat, bushels,	1,531,989	$1,938,511
Flour, barrels,	958,744	6,119,976
Indian corn, bushels,	5,062,210	3,367,418
Indian meal, barrels,	226,100	729,413
Rye meal, barrels,	444	1,852
Rye, oats and other small grain and pulse,		101,204
Biscuit and ship bread,		80,253
Potatoes, bushels,	43	34
Rice, tierces,	18,960	405,469
Total breadstuffs,		$12,744,130
Total provisions and breadstuffs in 1848,		19,655,432

From this it appears that our entire exports of provisions and breadstuffs to Great Britain, in the year ending on the 30th June, 1848, was $19,655,432, against $43,824,924 in 1847, a falling off of nearly 125 per cent.; and that the exports of breadstuffs alone, in 1848 was only $12,744,130, against $37,874,075 in 1847, a falling off in these articles of nearly 200 per cent.

We should bear in mind the fact, that many important events, calculated to disturb the natural laws of commerce, have occurred since the beginning of 1846. Of these, the famine in Great Britain, the repeal of the corn laws, the war with Mexico, and the revolutions in Europe, are the most prominent. The more immediate effects produced by these causes are subsiding, and although it may be concluded that the results flowing from all these events may in the end be favorable to our commerce, yet we may conclude that when the causes of agitation have ceased, commerce will again resume its former channels, and not until then can we estimate how much we have gained by the events which have taken place. The season is one, which in our opinion, requires more than ordinary caution on the part of both merchants and farmers, for if a spirit of speculation should unfortunately prevail throughout the country, a severe revulsion must inevitably follow.

ART. II.—PACIFIC RAILWAY ROUTE THROUGH MISSOURI.

GENTLEMEN:—With this communication I send you an interesting letter from our friend W. R. SINGLETON, Esq. For some little time

past, I have had it in contemplation to publish a collection of facts, in addition to those already furnished to your valuable journal, relative to the importance and practicability of the contemplated railway to the Pacific, and the preferable route for it. A portion of my plan has been to collect from reliable sources, as complete a description of the physical geography of the country, from the Mississippi to the Pacific, as possible, in order to enable the public and the Congress of the United States to decide upon a route for this work, without the necessity of expending time and labor upon a topographical survey of so extensive a region. I am gratified in being enabled to say to you that every evidence which I have been enabled to collect, (and they are numerous,) confirms the conclusion to which I had previously arrived, an outline of which was published by you.

The route from the mouth of the Kansas, directly through the Great South Pass—thence by the Valley of Bear River to the Soda Spring—thence directly west to Humboldt's or Mary's River—thence down its valley to the *Sink*—and thence through the Salmon Trout Pass into the Valley of the Sacramento, is *beyond all doubt the preferable route for this magnificent work.* At an early period I hope to lay before the public a mass of evidence upon this subject, which will render the conclusion here announced *irresistible;* and in the meantime I will here add, in brief, the results to which these evidences point:

1. A railroad cannot be constructed from Memphis, or from any point south of it, directly west to the vicinity of Santa Fe, because of the swamps along the lower portion of the streams; the Ozark ranges and the deep *canons* through which all of the streams south of the Arkansas flow.

2. A railroad cannot be constructed from any point north of Memphis upon the Mississippi south westwardly to the *Passo del Norte*, and thence to the Pacific, because the *canons* of the streams of New Mexico constitute a serious impediment; because the route pursued by Col. Cook from the *Passo* westwards, lies within the bounds of the Mexican territory; because the Rio Gila is the boundary between us and Mexico as fixed by the late treaty, and because north of that stream there is no valley, but the mountains press up to its very waters, presenting for miles together perpendicular walls of rock.

3. A railroad cannot be constructed from the Mississippi by the way of Santa Fe or its vicinity, westward to the Pacific, either at San Diego or at Monterey, because, first, the mule trail from Santa Fe to San Angelos, ascends and descends numerous mountains, all of which constitute impassable barriers; second, because the streams west of the Sierra Madre never flow through channels of sufficient width for such a purpose, but are interrupted at short intervals by narrow chasms or canones through stupendous masses of solid rock; third, because the whole country from Santa Fe westward for more than three hundred miles, is one continued succession of mountain chains of so peculiar a construction that they offer treble the difficulties to such a work as mountains of the same elevation in other portions of the continent would offer; fourth, and because the mule trail is the best road which as yet has been discovered, or is likely to be discovered, and this is difficult even for mules.

4. A railroad cannot be carried through the territory west of the Rocky Mountains, north of the Gila, south of the Great South Pass and east of the Wahsatch chain of mountains, because this whole district consists of narrow vallies and ravines, traversed in every direction by immense mountain chains, compared to which the Alleghanies are but gentle eminences. It is a volcanic region and the interior forces have acted with tremendous power, throwing up huge, precipitous, rugged and irregular masses of primitive rock—presenting every where perpendicular walls, deep, narrow and crooked gorges, and streams madly rushing from great elevations. In the late able speech of Col. Benton, delivered in the Senate on presenting his bill for the construction of a National Road, that able statesmen quotes from Col. Fremont some descriptions of the three parks, which are embosomed in the Rocky Mountains south of the South Pass. Many persons have inferred from this circumstance that Col. Benton designed to convey the impression that a route could be found from the sources of the Arkansas to the Bay of San Francisco. I do not so understand him. I only understand him as fixing upon St. Louis and Francisco Bay as the proper termini for the road—as asserting that enough is already known to enable us to decide upon the proper route—as forbearing even to say that he *believes* a railway can be made at all, and as objecting to all private schemes for its construction, and insisting upon its being undertaken as a great national work.

I agree with Col. Benton, in believing that we have already an abundant treasure of facts, from which we can indicate the true line for the railway, and that no farther surveys are necessary *for that purpose.* I go farther than he does in pointing out the line for the work, *and asserting with the utmost confidence that it cannot be constructed upon any other line ;* and I desire that this prediction shall be inserted in your journal, that I may incur the responsibility if found mistaken, and reap whatever of credit may be due, if found correct. My confidence is founded upon a careful examination of all which has been published bearing upon this subject; upon a variety of evidences which I have collected from men familiar with western geography, by correspondence and personal witnesses; and from some personal observation. I go farther than our distinguished Senator in firmly believing that a railway can be constructed from the Mississippi to the Bay of Francisco, not only without serious difficulty, but with even less of topographical impediment than can be found upon any railway at present in use within the States. I have seen no objection deserving a moment's consideration, save that of snow; and this objection may be easily and readily obviated. *We have but to elevate the rails three feet, and it is impossible that snow can prove a serious impediment.*

There is another controlling reason why the route which I have indicated should be preferred to all others. All of us agree that it is a matter of vast importance, considering our relations to the coasts of the Pacific, that a branch line should be constructed from some point upon the Columbia River, to intersect this great railway at some point west of the Rocky Mountains. This necessity has been anticipated by Col. Benton, and a provision inserted in his bill to meet it.

If the road be taken south of the South Pass, it will prove extremely difficult, and I think *impossible* to intersect it by a branch from Oregon, west of the mountains. If the route, which I have indicated, should be adopted, a railway can be made to ascend the valley of the Wallamette River to its head—thence over a low ridge into a plain over which it can be carried without other impediments, to the most northern bend of Humboldt or Mary's River. I would respectfully request those who take an interest in this subject to examine Colonel Fremont's map, and see for themselves how easily this may be done. Emigrants have already traveled this route to Oregon, and it is undoubtedly preferable to the one down Lewis' River, in all respects; but has not been much used, because the Indians upon it are more troublesome, than upon the other road. I have in my possession, a description of this road given by Mr. Applegate, an intelligent citizen of Oregon, who surveyed it from the Wallamette Valley to the Soda Spring in the northern bend of Bear River.

Another reason why the route I have indicated should be adopted, is that it *must* be the shortest one, and this is easily shown; a great circle passing through St. Louis and the Bay of Francisco, would go directly through the South Pass, and almost upon the line indicated to the head of Mary's River. If the continent were an uninterrupted plain from here to the Pacific, this would then be the preferable route; and why should it not be so considered now, when the road may follow an *air line* for more than half its length?

The people of Missouri, and of St. Louis especially, should remember that it is not only important to them that a railway should be constructed, but that it is still more important upon what line it shall be carried. I have endeavored to show that it must go through the South Pass; but it may have any one of a number of points for its eastern terminus, and go through the mountains then. I am persuaded that St. Louis is the appropriate point for its ultimate terminus, although I still think that the mouth of the Kansas should be the point where the United States should stop, leaving the portion through the State to State authority. I see no constitutional power to do otherwise. The suggestions you have made in your April number are eminently judicious, and I trust that the people will become fully aroused to the importance of the subject. It is perfectly astonishing how grossly ignorant the people of the east, and many eminent politicians are respecting western geography; and unless the whole truth is brought before the public and thoroughly elucidated, I consider it altogether probable, that we shall lose the benefit of having the eastern terminus of this road within our borders.

As the letter of Mr. Singleton contains an account of the physical geography of an important portion of our State, and as it may be some time before I can otherwise bring it before the public, and even possible that I may not do so at all; I have thought that his views would be of interest to your readers, and of much practical value, in estimating the true interests and resources of the State. The latter portion of it especially, announces in brief, the outline of a system of internal improvement for the States west of the Mississippi, which has grown, and continues to grow upon my esteem, the more I reflect

upon it. I trust Mr. Singleton will at an early period, illustrate this scheme in more detail. Your friend and obt. servant,

J. LOUGHBOROUGH.

INDEPENDENCE, March 15, 1849.

J. LOUGHBOROUGH, ESQ.—*Dear Sir:* Your favor of the 8th instant, I have just received, and hasten to reply. The questions which you have proposed to me, have been the subject of much thought to me for the past five or six months; and while the public mind has been greatly agitated by the various routes proposed from the Atlantic to the Pacific, I in common with the rest, have been influenced by the all engrossing subject.

Every individual member of the community seems to have formed his opinion relative to the best route for the contemplated railroad, and yet not one can say what is the nature of the country over which he proposes to carry the said road; and while to the engineer a subject of this magnitude affords material for deep and serious reflection, the opinions of others, so readily advanced and so boldly and confidently put forward, offer to him much amusement: for the thousand and one schemes which are projected tend to the bewilderment of the uninformed, and the vexation of their originators; while those best qualified to judge, and who know with more certainty relative to this matter, hesitate to declare what are the convictions of their own judgment.

Sometime last summer, for the purpose of drawing the attention of our own citizens to the important improvements which could be made in the west and south-west, I wrote a letter to Major BERRY, of Springfield, detailing my views at some length; and in connexion therewith I examined the railroad route proposed by Lieut. Maury, from Memphis to Monterey. Assuming his basis, I endeavored to shew that from Memphis a road to the west must pass as far north as the valley of the Osage, and if thus far, a branch to the Missouri river would be profitable.

Having succeeded in my object so far as to obtain a charter for the Independence and White River Railroad, and also a partial appropriation for the survey of the route, I perhaps should rest satisfied with the accomplishment of thus much of my scheme. But I must yet move on, andtrace out my complete plan, for when it shall have been fully developed, I feel confident that the whole west must unite in carrying it into execution; for it has for its ultimate results the development of the resources of the entire Valley of the Mississippi, west of that river. I will however not detain you from the main object of this letter, but defer it until the conclusion. I therefore proceed to give you a "topographical description of the country between the Missouri and Arkansas rivers; also of that between the Mississippi river and the longitude of Council Grove."

I shall begin at the mouth of the Lamine, and drawing a line due south to its intersection of the south boundary line, where White river leaves the State—shall establish this as the "*datum line;*" dividing the eastern from the western part of Missouri, from the fact that the

two sections differ in their geographical, geological and topographical features. To a superficial observer, scarcely any difference would appear upon the map of the State; but the topographer must at the first glance detect a marked and striking one.

The main ridges first claim our attention. That ridge, which leaving the eastern branch of the Sierra Madre at Long's Peak, west of St. Vrain's Fort, in latitude 40 degrees and 20 minutes, longitude 105 deg. and 45 minutes, runs south until it heads the South Fork of the Platte, becomes the main divide between the waters which flow north to the Nebraska and east into the Missouri; and those which flow into the Mississippi by the Arkansas. It passes a few miles north of Bent's Fort, and from thence bears due east, to the head of Little Arkansas; separates it from Smoky Hill Fork of Kansas, and passing north of Council Grove, a few miles east of which, divides itself into two branches; the northern one passing into the State of Missouri between the head waters of the Osage and the small streams which empty directly into the Missouri.

This ridge continues until it reaches the head waters of the river Lamine, and then again divides, its main branch passes south of all the branches of the Lamine, is the divide between that stream and the waters of the Osage; and after running towards the valley of the Missouri, there loses itself between the mouths of the Lamine and Osage rivers. Changing its character topographically, from the former to the latter so materially, that that part near the Osage appears to be a different ridge altogether. Those who have noticed the slopes of the hills at the mouth of the Lamine, would scarcely identify them as belonging to the same ridge with the bluffs just above the Osage.

The southern branch of the principal ridge, passing between the heads of the Osage on the east, and the streams which empty into the Arkansas, retains its character, and passing into the State of Missouri, in Jasper county, one hundred and ten miles south of the mouth of the Kansas, becomes upon the maps the Ozark range; which name is assumed to distinguish it from other ridges in that section. Possessing no feature whatever to characterize it as a mountain chain, for in every essential it is different from a mountain, this ridge as it progresses to the east, becomes the most remarkable feature in the topography of the State. It is the dividing ridge between the waters of the Missouri on its northern slope, and those of the Mississippi on its southern, from its inception at Long's Peak to its terminus on the banks of the latter river. From Long's Peak to the datum line in Missouri, it is celebrated for its pampas, its long slopes, continuous directions, and the great breadth and uniformity of its summit level; from the same line to the Mississippi river, it is equally remarkable for the reverse of these features; and hence I have divided the southern half of the State into two topographical departments. And while in many particulars, the escarpments of the ridges on the western division, show a similarity to those in the eastern; yet in all the essential qualities, they differ very materially. This ridge, as it approaches the heads of the Gasconade and Current's rivers, retakes the character it had abandoned at Long's Peak, and retains it throughout the eastern section; crosses the Mississippi river at Grand Tower, is cut through

by that river, also by the Big Muddy in Illinois; passes on to the Ohio river at Golconda, is again severed by the Ohio; and passing through Kentucky, merges itself into the Cumberland Mountains, between the heads of the Kentucky river and Big Sandy, on the north, and the Cumberland river, on the south.

We have thus traced a connection between the eastern branch of the Rocky Mountains at Long's Peak, and the Cumberland Mountains in Kentucky, only broken by the Mississippi, Big Muddy, and Ohio rivers; Showing throughout its entire length, certain geological features, and at its eastern end, exhibiting topographical similarities to its western. This ridge is at an elevation much above all the other ridges in the Valley of the Mississippi, and from this circumstance, I have formed a theory to account for the prairies to the north of it; but I shall not trouble you with it here.

From the west boundary line to the datum line, the two main branches of the principal ridge, (which I shall now denominare, for the sake of distinction, the "Lamine Ridge," and the "Ozark,") have the same characteristic features; which are, great width and regularity of summit, general uniformity as to grades, and the very gradual descent to the vallies of the streams; which intersect their slopes on every side. To the eye of the engineer, presenting a delightful prospect, in their peculiar adaptation for railroads, plank roads, &c.

With this view, my attention has been drawn to the western department for many years past, to connect the Upper Missouri with the Lower Mississippi, by a railroad. That I have succeeded I have no hesitation in declaring, even beyond my most sanguine expectations, as I have previously stated.

I now proceed to a comparison of the eastern with the western topography of the State. Referring again to the map, we discover that east of the *datum line*, the main streams running northwardly into the Missouri, from the dividing ridge, pass much nearer to one another, and although generally parallel in their course, yet in their meanders approach each other very frequently. Again, the branches of one stream, will head within two or three miles of another main stream; as for example, I refer to the ridge between the Gasconade and Osage. Many small streams of both rivers, head past each other, within a very short distance of the other main stream. This is the peculiar feature of the topography east of the datum line, hence the country would be a most difficult one for railroads. The ridges branching off from the main ridge, between two unimportant branches, frequently are found to be higher, and more irregular in their grade at the summit, than the principal one; indeed, from a personal and instrumental examination, it has been pronounced a more remarkable country than any within the States. Hence, in my examination of its geological features, when compared with those of the Sierra Madre, I unhesitatingly pronounce it to have been subjected to the same volcanic influences, although in a milder form. The characteristic rocks, are identical with those of Long's Peak, and many other points of the Sierra Madre. The main dividing ridge, before mentioned, east of the datum line, becomes broken, irregular, and mountainous, as it approaches the heads of the

Piney, Meramec, Indian Creek, and Big rivers, on the north; and Eleven Points, Currents, Black, and St. Francis, on the south, it becomes more and more broken, irregular, and ill defined; as it approaches the seat of volcanic action, near the Iron Mountain and Pilot Knob, those most wonderful of all natural objects, the ridge proper, loses itself in a strange anomaly, a valley. What, say you, a valley? Yes, a very valley! on one of the highest ridges in the State. The mountains which form this valley, rise up from the summit of this ridge, mostly of metalliferous formations, generally covered with a mixed growth of timber. I shall never, never forget, the grand and striking view of these mountains, which I obtained from an elevated point, just at sunrise, in the month of November, 1839. The autumn scenery of the west is celebrated in song, in story, and on canvas; but I am satisfied, neither harp, pen, or pencil, could portray one-tenth of the beauties of that one glance, as I surmounted the ridge, from the summit of which by one "coup d'œil," my soul drank in all the beauties of the Bellevue Valley. And—but I am the topographer and not now a poet—so I must e'en dismount from Pegasus, and trudge onward in the more humble garb of a pedestrian! As I have already remarked, this ridge continues its course unbroken to the Mississippi river, at the Grand Tower; but previous to which, it branches in several directions. 1st. Northwardly towards the Meramec, forming the divide between the Big river of the Meramec, and the various short and rapid streams that run into the Mississippi, which I shall term the Meramec Ridge. 2d. Southwardly towards the sunken district in Scott and New Madrid counties, east of the St. Francis, called the St. Francis Ridge, and gradually loses itself in the valley of that stream in the sunken region, and the Mississippi bottom.

Relative to the first branch, or Meramec Ridge, I have a few remarks to make. In its character, it possesses all the features of the main ridge, more broken and irregular as it is near to, and modifying those traits as it recedes from the parent trunk; until at the Meramec, it is similar to the bluffs on the Upper Missouri river, which are the breaks of the first main branch or Lamine Ridge, east of Council Grove. In this ridge, and the branches from it, are our most valuable lead mines, copper mines, and stone quarries, and as they are more and more developed, tend more and more to the benefit of our common State. But a few years hence, and we must have railroads to pierce this ridge in several directions, to transport these valuable products of the earth to the Mississippi; at present, the ox team is the precursor of the iron horse. I say *pierce it*, for the survey of it, as well as the main ridge, has settled the question that no railroad can be constructed *upon* it; it being too irregular and difficult as to grades, and horizontal section. The southern slope of the main or Ozark Ridge from the *datum line*, to the geologist becomes strikingly interesting, as he approaches its eastern terminus. First are the points running immediately down to White river, in all of which near the main ridge, are evidences of coal; as he approaches the Eleven Points, the mineral resources become more interesting, until, having reached the waters of the Current river, he is involved among intermediate hills, knobs and mountains of metalic deposites

of iron, lead, copper, gold, silver, zinc, cobalt, and many other rare metals; while porpheritic and granitic formations lead him to imagine himself at once transported to the "Stony Mountains," or the "Nevada" of California itself. The topographer can only look on with wonder and amazement. Where shall he begin his sketch? where place his main divide? echo answers "where!" With "confusion worse confounded," "rocks on rocks, piled mountains high," and a dozen other poetic sentences, which I might quote, to describe faintly, what in reality exists, all whirling through my brain, even to contemplate such a general "crash of worlds," my good friend the geologist, is quietly seated with "hammer in hand," pounding away with his specimens around him, oblivious of the world! Can I describe a banquet room, after a drunken revel? The surgeon may heal the broken heads and noses, the cabinet workman, the chairs and tables, but I have nought to do there—the earth and her sisters have had a glorious spree, and I leave those most interested to make the best of it. The topographer has no business there, so then hasten on to another equally interesting feature of a different nature—the country of the St. Francis. While the same convulsions were going on, and the country near the Iron Mountain and south-west of it was elevated, that near the lower St. Francis was depressed. We have no reason to doubt, that from the last bluff on the west side below the mouth of the Ohio to the mouth of White river, the general level of the country on the river was the same as above that point, but by the great earthquake which raised the one, the other was sunken, and is now as irregular in its lakes, river, and creeks, as the former is in its ridges and streams.

The eastern section of the State is broken and irregular in all its ridges—its streams tortuous, rapid, of sudden descent; draining a country rocky and precipitous where its escarpments approach the vallies. The streams excavated to a great depth below the summit of the ridges and rising by a gentle slope to within a short distance of the ridge, then by a rapid descent gaining its summit. So universally is this the case, that in all my surveys for railroads, a tunnel with very heavy ascending and descending grades was necessary to effect the transit from the head of the valley of one stream to another. The western section is generally regular and uniform, both in its vertical and horizontal sections; streams descending from the summit ridges by gentle slopes to the main vallies, and almost imperceptible in their descent; the ridges are wide, continuously direct, and uniform in grade, mostly covered with prairies, and peculiarly adapted to railroads.

"Where should a railroad go from St. Louis west?

After a careful examination I at once pronounce it by all means the most practical and economical to pass from St. Louis westwardly, until by some small stream the valley of the Missouri can be reached just above the Big Bonhomme Bottom, thence around the slopes of the hills on the south bank of the Missouri, to the Lamine; up the valley of this stream to Black Fork, to Davis' Fork, and thence on to the main or Lamine ridge, between Buck Knob and Wagon Knob, in LaFayette county; thence on said divide to Cool Spring and Lone Jack in Jackson county, and thence crossing the breaks of Little and

Big Blue, reach the "plains," as they are familiarly called, on the Santa Fe road at Black Jack Point. That this road can be constructed at a less cost than any other, all must admit. From St. Louis to the Missouri river but one small bridge is required; thence twelve other small bridges to the Gasconade—a large one there; thence three small ones to Osage—a large one there; thence eleven to mouth of Lamine—total, twenty-seven small bridges, average of one hundred feet, and two large ones. It is preferable for two reasons to use the valley of the Missouri: first, the grades will be uniform; and second, the branches of any main streams will all be crossed at one point, thus avoiding the difficulties always encountered in crossing a country over the breaks of the drainage; thereby giving a zig zag grade to the road. In addition, the amount of water to be passed can always be done at one point much better and cheaper than in fifty or a hundred. Again, the Missouri itself will be avoided; whereas on the north side it must be crossed twice. That the south side of the Missouri is preferable, is obvious: the amount of water received into the river from the north is much greater than from the south; almost all the streams on the north side head some distance in Iowa; and the whole drainage of the north half of the State, is through the Missouri river; whereas, on the south half, not more than two-thirds of it is drained by the Missouri. These are important considerations, and have influenced me in forming my opinion. But as interest must ever sway all men in their opinions, I doubt if I could convince any man on the north side that I am correct. Finally, I say let us have a railroad—north side or south side—from the east or from the west—first, last and all the time, my cry is a railroad.

By an observation of the map of the Mississippi Valley and tracing a line from Lake Superior due west on the 48th parallel, from the mouth of Pigeon river, north of the Missabay Heights, to longitude 95 degrees; thence south to the 46th parallel; thence west to 97 deg. longitude; thence south to 45th parallel, where it intersects the Plateau Du Coteau; thence in a south-eastern direction along the same, to the head of the Des Moines, longitude 96 deg. 10 min., latitude 44 deg. 10 min.; thence south to Red river; thence along the south bank of same, to the Mississippi river, we will encompass the western half of this great valley; and to those whose attention has been confined entirely to our Eastern States and their capacities, the assertion that the population of the Mississippi Valley is to control the world, will excite no other feeling than a laugh of derision. Those of us however, who have been close observers of the rise and progress of the west—have studied its peculiar features; have taken into view the genius of its people and their inevitable destiny; and have closely observed the elements which constitute us a whole people; have contemplated its soil, its mineral resources, and the water power now running to waste—must inevitably conclude that within this "grand basin," in another half century, will be gathered the most powerful nation upon the globe. Casting the eye to the west and north-west, we behold a tract of country, vast in extent, watered by numerous large streams, yet as little known to us as the heads of the Columbia or Colorado. *But that country must be settled.* Observe the connec-

tion which may be made by a railroad from the mouth of St. Peters to Lake Superior, and from the mouth of St. Peters to the Des Moines, thence to the head of the Platte and Grand rivers; down the ridge between the same to the Missouri, through Liberty and Independence, by the Independence and White River Railroad and White river to New Orleans, or to Memphis, and thence to Charleston, South Carolina. This I assume as a main stem, from which may branch out roads to Galena, thence to Chicago—the Des Moines to be improved by slack water. A railroad from Peoria to the mouth of the Des Moines, will connect us with the trade of the Illinois. One fact I wish you to note: from the mouth of St. Peters by a railroad through Independence and White river, the distance is less than by the Mississippi river past St. Louis. What difference would there be when the steam car shall compete with the steamboat? When St. Joseph shall have completed her road to Hannibal, and this main stem shall be in operation, it would draw all of the trade from the northern section of the State; and in the winter season, would be the only chance of communication with New Orleans.

Will this improvement injure St. Louis? By no means. Did the improvements of Pennsylvania injure New York, Boston, or Baltimore? Certainly not; for every dollar expended for the improvement of either of those cities, must tend to the benefit of all.

St. Louis will have roads of her own; one to the east, one to the Iron Mountain, and one perhaps to the west.

Finally, let us all unite in the one grand scheme before us—a railroad to the Pacific, be it by one route or another, I am for the railroad.

I am, dear sir,

Your obd't serv't,

WM. R. SINGLETON, *Engineer*

Independence and Missouri River Railroad.

ART. III.—ASSOCIATION OF LABOR AND SKILL—MECHANICS' INSTITUTE.

The power of associated labor, intelligence and enterprise—The advantages of such an association to the man of labor—The Mechanics' Institute of St. Louis—The importance of employing professors who may teach at night—In such an Institution mechanics may acquire knowledge sufficient for almost any useful or social purpose—The free cities of Europe in the Middle Ages—Their influence in breaking the feudal power—The prejudices arising from social distinctions—The benefit of free social intercourse between all classes—Vice the only true ground of exclusion—Combination of physical and mental labor.

The power of associated intelligence, labor, and enterprise, guided and directed by a common interest, has been so often demonstrated, that to urge its importance and benefits now, might seem almost absurd. But the arguments and experience of the past are soon forgotten, and cease to influence the minds and actions of a large portion of mankind, unless frequently repeated and urged upon their attention. To him who has to depend upon the labor of his own hands for the

subsistance of himself and family—whose mental and physical energies must direct and work out his own fortunes, this subject is of peculiar interest, appealing, as it does, to all those feelings calculated to arouse a legitimate ambition in the human heart. Through the medium of a well organized association, he may be enabled not only to improve himself in those sciences connected with his art or occupation, but he may fit himself for the discharge of any duty or trust which may be imposed upon him; while, if isolated, and acting alone, with nothing to stimulate him but necessity—having to undergo daily and constant toil to maintain himself and family—he finds neither the time nor inclination, nor is he inspired with ambition, to improve his mind beyond what is necessary to enable him to carry on his daily avocation; but were he associated with his fellow mechanics or workmen, for the high and noble purpose of improving his mental and social condition, the stimulating effects of a generous emulation would arouse and call into action every principle of manhood that belonged to his nature. But, besides the improvement of mind, and the advantages accruing in a business point of view, there are also social advantages, which alone constitute a sufficient reason for such an organization; for, after all, the character of an individual is formed principally, in the private social circles of life. Here we take on the habits and imbibe the principles of virtue or depravity; here centres the heart's gladness or sorrow; here we are linked in destiny with those who are to cast sunshine or gloom over our future lives. Therefore, an association calculated to elevate, and give tone to the mental and moral character of the society in which we move, and which will enable us to make selection of congenial spirits with whom to associate in after life, is of itself of infinite advantage. But if we take as true the maxim—which we suppose all will admit—*that a Republic is great in proportion to the amount of intellectual development and moral culture of her citizens, that all her acts are but the reflection of the national will, based upon the amount of virtue and intelligence in the whole*—then, indeed, does this question assume a magnitude and importance commensurate with the greatest intellect, the loftiest genius, and highest aspirations; a field wherein all may labor, not only with a consciousness of right in a good cause, but with a fair expectation of reward—if not in the more substantial benefits of life—yet, in the establishment of a name that shall be more enduring than the statue of brass, because written upon the institutions of the country, to be impressed upon the minds and hearts of future generations.

While upon this subject, we cannot refrain from making some remarks in relation to the Mechanics' Institute of St. Louis, and the advantages which may accrue from an organization having in view not merely the exhibition of specimens of artistical skill, but also a plan of instruction in all those branches of science connected with the several departments of mechanism, as well as a general course of instruction, that would fit the learner for any and every duty and condition in life.

The charter granted by the State, is sufficient for all these purposes. With a proper organization, therefore, under it, and the employment of competent professors and teachers in the different branches, who

shall teach at night, so as not to trench upon the time appropriated to labor and business, every mechanic in the city may acquire an education that will be not only a source of pleasure, but of profit also, and fit him for the discharge of every social duty. This is the course now being pursued by similar institutions in other parts of the country, and the results flowing therefrom, thus far, are most propitious. Powers, the great artist, was connected with the Mechanics' Institute at Cincinnati, when his genius made the first effort in modeling those sculptured forms of beauty that were destined to give his name to future fame, and confer honor upon his country. It was his connection with this Institute that first drew friends around him, who, appreciating his genius, generously supplied him with the means of visiting Italy, there to perfect himself in his art.

If such an organization as we have suggested, were to be made in the Mechanics' Institute of St. Louis, there should be some provision for an apprentices' department, with competent teachers, and a course of studies adapted to their several pursuits, and calculated to prepare them for future usefulness, and excellence in their respective arts.

Ten hours a day is the time custom has fixed for journeymen and apprentices to labor; this gives them fourteen hours to themselves; eight hours is abundance for sleep; this leaves six more at their disposal. What shall they do with these six hours? Some, doubtless, with large families, would have to employ a portion of their time about their homes; those with small families or with none, could, with reasonable diligence and ambition, aided by the Institute, acquire in this spare time, a degree of knowledge sufficient to fit them for any pursuit or position in life; provided that the means are made accessible, so that they can pursue their studies at those hours when they are not compelled to labor.

The Mechanics' Institute, organized and conducted on the plan we have indicated, with good teachers, would enable all to avail themselves of that which is power—human knowledge; whilst it would tend to elevate the character and standing of those engaged in the mechanic arts, for with character and power comes their attendant—*respectability.*

When we contemplate, for an instant, what were termed the free cities of the Middle Ages, in Germany, Italy, France, and England, and see what artisans, traders, merchants, and laborers, enjoying limited corporate privileges, could accomplish in ages of comparative barbarism and ignorance, we have a forcible illustration of what numbers *can do*, when associated for the purpose of achieving a common and definite object; and when we trace the rise and progress of these corporations still further, and see them battling down the strong arm of feudal power, and sowing the seeds of democracy and civil liberty—lights heralding the dawn of modern civilization—even we, at this day, and in this country, can feel gratitude towards those who were the first, through the combined power of numbers, to break through the charmed circle of despotism—the rule of an iron aristocracy. Why shall not our mechanics learn wisdom from the past, and in this age, when social organizations seem to be the order of the day, organize upon such a basis as to place mechanism and mechanics in their true

position: that of being second to no other business, calling, profession or class? This can be done; let but a few of the right spirits take hold of it, and organize the Mechanics' Institute upon principles that will authorize every mechanic in the west to look to it as *his* College—as an institution of learning accessible to him and to his. Do this, and you will have accomplished half the task. You will have sown the seeds of a proper and generous pride, and self respect, which shall germinate and bring forth rich fruit.

We know there are difficulties in the way; but let us remind our readers that nothing good or great is ever accomplished without great effort. That which is easy of attainment the commonest mind may grasp; it is only the bold, persevering and energetic who accomplish things worthy of manhood.

In making these suggestions, however, we would not be understood as proposing any thing which might lead to distinct classes in society. On the contrary, by increasing the educational facilities of mechanics, and giving them the means of acquiring an education, and improvement in their respective arts, social distinctions, and the barriers to personal intercourse will be broken down. We hold that the perpetuity of our free institutions, and the advancement of civilization in the best meaning of the term, must depend mainly upon a free, unembarrassed social intercourse in private life, between all citizens, of whatever degree, trade, profession or calling; that the only ground of exclusion should be *vice*, and not the kind of labor a man happens to perform in the acquisition of the means of living. Such an unembarrassed social intercourse would be alike beneficial to all classes, as it would tend to break down that narrow-minded prejudice and bigotry which is felt by individuals who associate with one particular class entirely. At the same time, each particular class would impart its peculiar ideas to the others. The result would be that the mental vision of society would be enlarged, and there would be a homogenity in its parts, that would lead to new and glorious achievements in the onward progress of civilization.

If the mechanics of St. Louis would go to work vigorously, and organize their Institute, other towns and cities in this portion of the west would be induced to follow their lead. Thus, in a short time, there might be laid the foundation for a new condition of things in society.

Another important consideration in this matter, is the fact that it is practically carrying out that much talked of, and generally admitted principle, that the blending of physical exercise with mental labor is essential to a vigorous intellect, discriminating judgment, good health, and good morals. Then let the true practical test be made, and let the man of toil have a chance in the arena of intellectual struggle and achievement. Give him a chance to enter as an equal in the world of thought, with his iron nerves and thews of steel, and see whether his mind will not play as vigorously as his arm that wields the sledge hammer.

ART. IV.—SCOTTISH AGRICULTURE.

BY G. B. DAVIDSON, OF ILLINOIS.

Manuring, how essential—Farm manure, how prepared, &c.—Lime, how used—Its effects—Not to be used without other manure—Bone manure, how prepared and used—Price—Quantity used per acre—Guano, where found and what it is—Its effects—Cost of manuring per acre—Fish brine and salt, how used—Intestines of fishes—Quantity used per acre—How used—Salt water, how used—Remarks on stock—How fed and kept—Value of, weight, &c.—Sheep.

As a carpenter is known by his chips, so is a farmer by his collection of materials for manure. This is literally true of the Scotch farmer; for with him, manuring is as necessary as ploughing and sowing. He would as soon think of making his horses work without food as to make the land yield crops without manure. Experience has proved that the one is as impracticable as the other. Manuring is, therefore, a matter of primary importance; and in the present paper we shall endeavor to describe some of the different kinds of manure in use, with their manner of preparation, &c.

The manure to which the attention of the farmer is first directed, is that which is produced on the farm, from stock and otherwise. This requires no immediate outlay of money; and it also has the advantage of being the most convenient. Cattle, whether kept in stables, sheds, or folds, are littered with as much straw, or some other substitute, as they can possible waste. The manure thus produced is carefully preserved, and prepared for the fields. In winter, when nothing else can be done, it is hauled to the fields on which it is to be used in the spring, and put up in large hills, in the most central places. In this state it remains till within three or four weeks of the time it is to be used, when it is turned over, well loosened, and covered on the top with fine earth. In this state it becomes heated, when it is in the best condition for applying it to the land. After it is scattered on the surface, it is ploughed down as fast as possible, so as to prevent it from losing its moisture. This kind of manure is used in raising every kind of crops, which the country is capable of producing, and is the only manure used by many farmers, particularly of the poorer class, who have not the means of purchasing any other.

Lime, if it can be called a manure, is the next most extensively used article, for agricultural purposes. The abundance of limestone, and the cheapness of coal, causes lime to be very cheap—seldom as high as twenty cents per bushel. It is applied in many different ways—sometimes it is mixed with moss, and spread, during the latter part of summer, on the meadow which is to be ploughed in the autumn. Sometimes it is put on the turnips, after the plant is sufficiently strong, and immediately before hoeing the second time. When applied in this way it is slacked, and kept as dry as possible, so as to make it spread with ease. It is also sometimes mixed with farm manure, and in some other ways which it is not important to notice.

The quantity of lime for an acre, varies according to the quality of the soil. If light and shallow, the quantity must be small; otherwise the land will be burned, and produce little or nothing. Barley, rye and grass, are the only crops which can be raised on over-limed land; and even of them, nothing like an average crop can be produced. The writer has seen patches, twenty years after the lime had been applied, which would produce no other crop. Where the soil is deep, however, and of a clayey quality, lime may be used more freely. But how small soever the quantity, it never fails of doing good service. The farmers calculate that, as a general thing, the first and second crops after liming, pay all expenses. Lime, besides producing good crops, is believed to be a preventive of worms and bugs.

Good as the effects of lime may be, the farmer who limes does not in consequence, fail to manure. The regular quantity of manure must be used, or liming is of little consequence. Lime does not strengthen or enrich the soil; it but acts as a stimulant, to turn its strength and richness, whatever that may be, to the best account; consequently, it is indispensable when lime is applied to give the land a thorough manuring.

Bone manure is also extensively used. This manure is prepared from every variety of bones, ground to the size of beans, or smaller, in a machine made for the purpose, called a "bone mill." This manure generally costs about four shillings and sixpence sterling, or $1 20 per bushel. Twelve bushels are sufficient for an acre of turnips, if planted with a dibble on the top of the drills, before the seed are sown; but if spread in the ruts and covered in with the plough, about forty bushels is necessary. The latter quantity will, in an ordinary season, produce an excellent crop of turnips; afterwards one or two good crops of grass, and a good crop after meadow.

Carbon and plaster of Paris are used, though not extensively, it being considered of more utility to use something else.

Of late, guano has been introduced, and is extensively used. This manure, supposed to be the excrement of wild fowls, is found on the coasts of Africa, and in South America, in Chili, Peru, Chinche, &c.* We cannot describe the effects of guano better than by quoting an extract from a letter, received from an intelligent farmer in Scotland, dated 17th of January last. The writer says:

"Guano is now used here, both for green and grain crops, to a great extent; and raises extraordinary crops on all sorts of land, at an expense of about twenty shillings an acre."

Brine, in which fish has been preserved, is used to a considerable extent, and found of great value. It is frequently poured on the top of the hills of matter collected for manure, until they are well saturated; and where brine cannot be procured, salt is not unfrequently mixed with manure. Salt, however, is too dear to be used in this way very extensively.

Another excellent manure for those who are convenient to fishing towns, is the intestines, heads, &c., of fishes; and such fishes as are unfit for the table. A great number of what is called "dogs," or dog

*For a full description of guano, see supplement to Ure's Dictionary.

fish, are caught in the herring nets, which are used only for manuring land. The price of this manure varies according to the fishing season. Before the fishing season commences, the farmers contract with the fishermen for all the *entera* of the fishes, and such as are worthless for other purposes; consequently, when the take of fishes is great the farmers' part is proportionably great. This manure is the very best that can be put on land. When mixed with two-thirds of sea-weed, moss, or any other manure, twenty cubic yards of the mixture is sufficient for an acre; and will produce, on any soil, an extraordinary crop.

All kinds of sea-weeds are good for manure, and some farmers haul salt water a great distance, and pour it on their fields, and on substances collected for manure; and we never heard any complain, that in doing so they labored in vain.

In closing this part of our subject, we would add, that there is nothing which the Scottish farmer allows to go to waste. What is fit for nothing else is converted into manure, and every thing which will make manure is considered valuable.

The raising of stock is a very important branch of husbandry with the Scotch farmer; for it is on stock he chiefly relies for the payment of his rent. If grain enough can be sold to pay incidental expenses, it is as much as the farmer expects. Hence he depends entirely on his stock to discharge the landlord's accounts which, as was shown in a previous article, is no inconsiderable item.

The first consideration in stock raising is to procure the proper breed, that is, the breed which is the most fashionable, and which will command the highest price when selling. And here we would remark, that it is not always the best breed of cattle which is most in vogue, nor that which is kept with least expense; but frequently the very reverse. Why it is so we know not; no more than we know why one month overthrows the fashions of its predecessor. Once the "Dun Robbin breed was all the fashion. They are short legged, compactly built, and require but a small quantity of food—they do not grow large; but weigh very heavy to their size. The cows give a fair quantity of milk, of an excellent, rich quality—making more than an average quantity of butter, compared with the milk of other cows; and we think it would be difficult to find a breed of cattle which, in the whole, would be so profitable to the farmer. But the Dun Robbins are out of fashion; and so are almost every kind except the "Tease Water." They are a very large, long legged, gaunt, raw boned, kind of cattle; and require a great quantity of food; at least one-third more than the Dun Robbin. The cows give a great quantity of milk; but so poor and watery, that it is scarcely fit for anything. It yields very little cream, and of course very little butter. Yet such is the estimation in which they are held that, at the cattle shows, they are generally awarded all the prizes. So far as the *Highland Agricultural Society* is concerned, this is not the case. At its shows they are not allowed to compete with other cattle.

In taking care of stock, comfortable stables are provided. There is no such thing as cattle laying out in the snow, or standing shaking in a cold pen, by the side of a rail fence, eating their food. The sta-

bles and sheds, in which cattle are kept, are built of rock, and cleaned regularly every morning and evening, and the cattle well littered with straw, or something else provided for the purpose; so that one could scarcely tell, only for seeing the cattle, but that he was in a well kept livery stable. They are fed as regularly as the farmer himself; not much at a time, but often, four or five times a day. The first thing in the morning is to feed the cattle, and frequently the last thing at night.

On what is called a well stocked farm, one-fourth, or a fraction over, are cows; one-fourth one year old; one-fourth two years old; and one-fourth three years; omitting to count calves till a year old. A farmer therefore who can keep ten cows, has ten head of cattle to dispose of every year. And if he is able to feed them the third winter, they will bring the highest price. Suppose he feeds ten, each weighing forty stone, a fair average weight for cattle three years old; and dispose of the same at five shillings per stone, which is about the average price, the amount of cash he would receive for the whole would be £100 sterling, which, to say nothing of what is made from the cows, would pay the rent of a snug little farm.

We have little room to speak of Sheep. Those who go extensively into this branch of business, keep them on the hills during summer, where their principal food is the bloom of the heath, and bring them to the plains during winter. The business is profitable were it not that in winter, great numbers are lost in the snow.

ART. V.—HISTORY OF THE AMERICAN FUR TRADE.

BY J. LOUGHBOROUGH, ESQ., OF MISSOURI.

CHAPTER I.

Origin of the Fur Trade—Discovery of Canada—Cartier—DeMorts—Champlain—Traffic with the Indians commenced—Origin and character of the Courier de Bois—Facility of forming savage habits—Immorality of the Courier's de Bois—The license system—Discovery of Hudson's Bay—Grosseliez—Charter of Bay Company—Deficiency of organization—Their slow progress—Voyages of Knight, Barlow, Middleton, and Moore and Smith—Wars with French traders—Treaty of 1763—Cession of Canada to the English—Journey of Carver—The Yazoo Indian's trip—Journeys of Hearne—Incidents illustrating Indian life and character—Return of Hearne.

It is a singular and striking manifestation of the wisdom of Providence, in educing good out of evil, and rendering the worst passions of human nature subservient to the ends of virtue, that the fur trade, which had its origin in vanity and avarice, has, nevertheless, essentially contributed in many ways, to the lasting welfare of mankind.

From the earliest period, the passion for the finer furs, as ornaments, has existed among nations of northern origin, as that for jewels and precious stones has characterized those of southern regions. Time, conquest, and emigration, have changed the relative positions of people, but not their tastes; and now we see a thousand characteristics singularly out of harmony with the localities in which they are found. It is thus that we see the taste for furs, as articles of dress and ornament, transplanted by the Turks and Tartars into southern Asia and China. The simple fact that certain animals wear a skin covered with soft and rich fur, with which princes and nobles love to be decorated, and that there have been men so devoted to the love of lucre as to undertake the most hazardous voyages and journeys, and encounter the most imminent dangers to profit by this passion of the great, has contributed in an inconceivable degree to the advancement of science, the spread of true religion, the improvement of commerce, and the progress of civilization. The founders of the fur trade, (without certainly being impelled by such motives,) have brought to the knowledge of the world boundless deserts, and almost impenetrable forests; and an accurate account of the manners, customs and habits of millions of human beings previously unknown to the civilized world. By introducing a knowledge of the capabilities and resources of these wild regions, a boundless field for an incalculable amount of commerce has been opened up. By informing the philanthropic and the pious of the true situation of vast masses of benighted and suffering fellow creatures, they have induced thousands of zealous and pure minded missionaries to carry the true religion of the cross into regions destitute alike of earthly comfort, and of future well founded hope. By giving the assurance that the cultivators of science might follow their footsteps in safety and security, they have contributed to introduce an inestimable amount of useful knowledge in every department of natural science. Astronomy has been greatly advanced; geography extended, until at this time scarce a spot upon the globe remains unexplored; geology, that infallible guide to the physical history of the past, and the agricultural success of the present, has found in these wild regions, some of her most valuable treasures; botany, zoology and ornithology, have been enriched with vast discoveries; and above all, and more than all, the world now fully understands to what ends, and by what means, its efforts must be directed in furtherance of the great mission of civilization. It may be true that population would, in the course of time, have spread over all these regions; but its progress is naturally slow—men reluctantly leave the confines of civilization, without some assurance of the character of new lands, and centuries might have elapsed before the surge of population would have swelled to the shores of the Pacific. In that period, how much would have been lost of inestimable value to the comfort, the happiness and the intellectual advancement of mankind! And how deeply is it to be deplored, that so many signal benefits, should have been purchased by the sacrifice of the lives, the morals, and the health of thousands of harmless beings, for whose protection all the safe-guards of law, and all the military force of several governments proved wholly unavailing. But the best grand results, and the most benefi-

cent designs of Providence, are always more or less polluted by the evil passions of mankind, and we have reason to be fervently thankful, that in spite of these evil passions, the benefits resulting from the fur trade, have far overbalanced its injuries.

Francis the First of France, a high-minded, chivalrous and ambitious monarch, eager to cope upon equal terms with his illustrious rival, Charles the Fifth, fitted out several expeditions for maratime discovery. The second of these great voyages was entrusted to the command of Jacques Cartier, who was selected by the Sieur de Millerays, Vice Admiral of France. The event justified the choice; for Cartier proved himself one of the most intelligent, courageous and prudent commanders of an age fruitful in heroic spirits. He sailed from St. Malo in 1534, with two ships. He penetrated for the first time into the Gulf of St. Lawrence. The advanced season, however, compelled him to return to France. Meeting there with a flattering reception, he resolved again to embark and prosecute his discoveries up the river St. Lawrence into the interior of the contineni. His squadron consisted of three ships. They weighed anchor in May, 1535, and steered for New Foundland. On his former voyage he had induced two of the natives to return with him to France. As soon as he entered the mouth of the river, these natives informed him that it ran through a great Continent with large lakes. He proceeded up the river as high as the point where the city of Montreal now stands, where he found a large Indian town, built of logs and bark, and surrounded by breast works. After remaining some time, he again sailed for France.*

Like his illustrious predecessor, Columbus, he received ingratitude instead of reward; but the authors of it were punished by a providential failure of several successive expeditions towards the rich land he said he had discovered. Cartier himself, was subsequently lost in a voyage undertaken upon his own account. At length, after a number of abortive attempts at discovery, and colonization, *DeMonts*, a gentleman of Santoigne, about the end of the sixteenth century, fitted out an expedition for *New France*, as all northern America was then called. *DeMonts* himself, was finally tempted into piracy, but Champlain, his second in command, proved true to his trust. He founded and fortified a town on the present site of Quebec, reduced the neighboring country to cultivation, and headed a number of expeditions into various portions of the interior. It is no part of our object to enter upon the details of these French geographical discoveries—deeply interesting as they are—save in so far as they are incidentally connected with the rise and progress of the fur trade.

This first permanent settlement of the French in Canada, was the nucleus around which, in the course of time, a multitude of other small colonies were collected. Finding a large demand in Europe for the finer furs, and that the country abounded in animals bearing them, they immediately opened a traffic with the natives, giving to

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*Cartier made a third voyage, in which he fancied he had discovered gold and diamonds. His collections, however, were only limpid quartz and golden yellow mica, mistaken in that ignorant age for gold and diamonds.

them trinkets, and coarse and cheap articles of clothing and cutlery, in exchange. At first, when the wild animals were abundant, and the Indians numerous and powerful, the white traders contented themselves with remaining in their towns, on the banks of the St. Lawrence, and purchasing the skins brought to them by the red men. As the supply diminished, and as the Indian tribes became thinned, corrupted and weakened by the destructive proximity of civilization, the traders found it their interest to penetrate the recesses of the wilderness and barter with the hunter within his own territories. The individuals who undertook this task, were a class of hardy adventurers, who joined the savages in their villages, married wives among them, adopted with wonderful facility their habits and customs; and engaged with them in their hunting excursions, sharing the proceeds. Their distant inland expeditions (or voyages, as they called them,) frequently occupied as much as twelve or eighteen months. It is astonishing how much easier it is for the most civilized being to descend into barbarism, than for the most intellectual savage to rise into the civilized state. In the first case, twelve months uninterrupted association with savages, almost uniformly effects the result; whilst we believe there is no example in history of a grown savage having been converted into a civilized being. Generations of contact alone can accomplish it. On this point we have read much of conjecture and speculation. To our mind the reason is clear and satisfactory. Civilization is the creation of the reason, and implies a conquest over the passions and the appetites; barbarism consists in the almost undisturbed reign of the latter. The one state requires a constant and steady effort of mind, the other requires none. The one is a rational condition—the other an impulsive one. The one is a condition of necessary restraint; the other of entire freedom. We confess it is easier to conceive than to express the distinction, but the two conditions of the mind and feelings we have *experienced.*

These daring men had to encounter every form of toil, hardship, and danger. They had to associate with savages, selfish, brutal and treacherous, intellectually; and depraved as they were morally, even their inferiors—beings with whom they could feel no sympathy, towards whom their only relation was a mutual struggle to murder, to cheat, and to plunder. Under these circumstances, free from all the restraints of law and of public opinion, the *Courier des Bois*, as they were called, rapidly degenerated into intelligent and cunning beasts of prey; combining the foresight, steady perseverance, and the powers of combination of the white, with the rapacious, unscrupulous and unprincipled ferocity of the Indian. So fatal was their example to the morality of the natives, and so serious an impediment did their course of conduct become to the pious and zealous efforts of the missionaries to infuse into the Indians the pure principles of the gospel, that at their urgent solicitation an ordonance was published prohibiting all persons whatsoever from entering the Indian territories without a license, and making the continuance of the license depend upon their conduct.* In the state of society then existing this remedy was

*Sir Alex. Mackzenzie, page 1 to 3.

of course nearly nugatory. Even at the present time, a similar system more strictly guarded, is found almost impracticable to enforce.

In the year 1708, Henry Hudson re-discovered the Strait connecting the great Bay, which bears his name, to the Atlantic. Through this Strait he entered the Bay, where his crew mutinied, bound him, and put him with his adherents, the sick and the wounded, into a shallop and then made sail. He was never heard of more.

This voyage of Hudson was followed by a number of others, the leading objects of which were to penetrate into the Pacific through some of the inlets of this Bay, or to discover a north-west passage into that ocean. The last of these voyages, previous to 1668, were those of Fox and James; and their crews disseminated on their return such glowing accounts of the abundance of rich furs, that they excited the interest of Grosseliers, an enterprising individual, who undertook a voyage to survey the country, and laid before the French government a scheme for a settlement. The Minister rejected the scheme as visionary; but Grosseliez having obtained an introduction to Prince Rupert, then in Paris, obtained through his interest with the English King, a vessel which sailed in 1668, and penetrated to the top of James' Bay. Here they erected Fort Charles on Rupert river. In the succeeding year, Prince Rupert, with seventeen others, were incorporated into a company. To this company Charles the Second gave and granted in fee, as lords of the soil, all the territories on the coasts and confines of all the seas, lakes, and rivers, within Hudson's Straits, not actually in the occupancy of any other prince or state, together with the sole and exclusive right of trading with all the inhabitants thereof. The leading motive of the King, was to further the efforts for the discovery of the northwest passage, and the duty of aiding and assisting in these efforts, was expressed as a condition in this charter.*

This company accordingly commenced operations, but their organization was so deficient, that it made but slow progress in its attempts to rival the French in Canada. Its commandants and clerks had all fixed salaries, were without a prospect of future promotion, and were consequently without any motive to stimulate them, beyond the performance of their specified duties. The hands or voyageurs, were usually Orkney men, or men from some other of the Scottish Isles, whose inflexible dispositions and fixed habits, illy adapted them to an intercourse with a new and savage race of people. Accordingly we find that in 1749, nearly eighty years after, the granting of their charter—although at that period the animals were abundant—an attempt was made to deprive them of their charter, on the ground of *non user:* and the consequent investigation demonstrated that they had accomplished very little. They possessed at that period only four small and badly constructed forts, manned by one hundred and twenty men. They only realized a nett profit of about $25,000 per annum. At the same period the furs imported into Rochelle, from Canada, yielded to the French traders a nett profit of about $100,000.†

*Macpherson's Annals of Commerce, v. 2, p. 555. See also the Charter.

†Report of Committee of the Commons, reprinted in 1803, and Anderson's History of Commerce, v. 3, p. 237.

Previous to the peace of 1763, the only efforts made by the company to fulfil the condition of their charter, respecting the northwest passage, were the voyages of Knight and Barlow, in 1719; of Middleton in 1742, and of Moore and Smith in 1746. The vessels of the first were never heard of; those of the second returned without accomplishing anything of note, and the last expedition was, if possible, of less consequence still.

By the treaty of Ryswick, in 1697, it was provided that the Hudson's Bay territories should belong to France; but if the exact line was drawn as provided for in the treaty, it was never fairly understood or recognized by the Canadian French. Consequently, from this period up to the treaty of Utrecht, in 1714, a state of quasi war existed between the French traders and the Bay Company; and the latter were several times dislodged by the former; and as the latter treaty provided for commissioners, whose action was not heeded, this war continued until 1765. Fort Churchill was erected in 1733, in defiance of treaty—strongly fortified and mounted with 40 pieces of cannon; but it was, nevertheless, taken by LaPayrouse.*

By the terms of the treaty of 1763, Canada, together with all the other dominions of the King of France on the continent, east of the Mississippi river, except only the narrow strip between that river and the Ibberville, and Lakes Maurapas and Pontchartrain, were ceded to Great Britain. This treaty was signed at Paris. The region extending southwest from Hudson's Bay to the great Lakes, and the heads of the Mississippi, had long been frequented by the traders from Canada, and had been partially surveyed by French officers and missionaries. This region was also visited, in 1766, by Jonathan Carver, a native of Connecticut. The object of Carver was to ascertain the breadth of the continent, about the 46th parallel, induce the government to establish a post somewhere west of the Mississippi, and thus facilitate the discovery of a northwest passage. In his journal is to be found the *first mention of the Oregon river, by any English trader or traveler.* He derived his account of it from the Indians. Pecuniary embarrassments prevented the prosecution of his scheme.

One of the strangest adventures which has been preserved to us of that period, is recorded by the French traveler, Lepage Dupratz. A native of the Yazoo country, named Monchactabe, having taken a roving fit into his head, deliberately set out, followed the Missouri river to its head, crossed the mountain barrier, and pursued his course down the Columbia a considerable distance. Here he was checked by the existence of a war between the tribe with which he found himself, and another much lower down. He stated that he was there informed that the stream which he had descended emptied into a great water, where ships had been seen, navigated by white men with beards. All the circumstances related by him correspond so well with facts since discovered, that there is little room for doubt, of the truth of this Indian's story, of his extraordinary adventures. He was absent on this expedition upwards of five years.†

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*Cox's Narrative.

†This account is to be found in the Abbe de Maserier's Memoirs Seur la Louisiana.

The first actual discovery of a river emptying into the Arctic Sea, was made by Mr. Samuel Hearne, one of the agents of the Bay Company. The plain, simple narrative of his journeys, as written out by himself, is one of intense interest. The difficulties and dangers of such a journey in these high latitudes, are inconceivable to those who have not read with attention many accounts of them. The scheme was set on foot professedly for the purpose of northern discovery, to redeem the Bay Company from the reproach of having entirely neglscted to fulfil the conditions of their charter; but the real purpose was to ascertain whether the Indian tales relative to rich mines of copper in the north, were true. Hearne made, between 1769 and 1772, three journeys from Prince of Wales Fort, on Hudson's Bay, near the 60th parallel. In his second journey he went as far as White Snow Lake, in 64 deg. Here the accidental destruction of his quadrant compelled him to return. Some idea may be formed of the privations endured in this journey, from the following extract:

"To record," says Hearne, "in detail, each day's fare since the commencement of this journey, would be little more than a dull repetition of the same occurrences. A sufficient idea of it may be given in a few words, by observing that it may justly be said to have been either all feasting or all fasting. Sometimes we had too much, seldom just enough, frequently too little, and often none at all. It will be only necessary to say that we fasted many times two whole days and nights, twice upwards of three days, and once, while at Shenanee, near seven days, during which we tasted not a mouthful of anything except a few cranberries, water, scraps of old leather, and burnt bones."

On these occasions, Hearne often saw the Indians examine their wardrobe, which consisted chiefly of skin clothing, considering what part could best be spared, when sometimes a piece of half rotten deer skin, and at others a pair of old shoes, would be sacrificed to alleviate extreme hunger.

On his return he met Matonabbee, an intelligent chief, who had advised the journey. The Indian's notion as to the real cause of Hearne's failure, is amusing and characteristic enough. "In an expedition of this kind," said he, "where all the men are so heavily laden that they can neither hunt nor travel to any considerable distance, in case they meet with success in hunting, who is to carry the meat? Women were made for labor; one of them can carry or haul as much as two men can do. They also pitch our tents, make and mend our clothing, keep us warm at night, and, in fact, there is no such thing as traveling any considerable distance, or for any length of time, in this country, without them; and yet, though they do every thing, they are maintained at a trifling expense; for, as they always act the cook, the very licking of their fingers in scarce times, is sufficient for their subsistence."*

On his third journey, Matonabbee accompanied him with seven of his wives. On the 2d of March, they arrived at the Doobaunt Whoie

*Hearne's Journey, page 55.

river, where they found a large encampment of northern Indians. They found a plentiful subsistence by catching deer in a pound. Their method of accomplishing this, is to find a frequented deer path, and enclose with interwoven trees and brushwood, a space near a mile in circumference. The entrance of this circle is the size of a common farm gate, and the inside is crowded with thickets of brush, between which are set snares of well twisted thongs. On each side of the entrance, a fence of limbs and brush is started and run out, spreading apart as they proceed, to the distance of one, two or three miles, like the wings of a partridge net. Between these rows run the paths commonly used by the deer, When every thing is prepared the Indians take their station on an eminence, commanding a view of this path, and the instant any deer are descried in the right position, the whole village, men, women and children, steal under cover of the wood, until they attain a position in the rear. They then draw up in the form of a crescent, and advance with shouts. The deer are thus driven forward until they get into the pound. The entrance is immediately closed by the Indians, the women and children run round the outside to prevent them from leaping the barrier, and the men enter the circle with their bows and spears, and speedily despatch the victims.*

At Cloyey the expedition was joined by nearly two hundred Indians. This occasioned a terrible misfortune to Matonabbee, for two of the handsomest of his wives here eloped to rejoin their former husbands. But this was not the worst. There exists an extraordinary custom among these northern Indians by which the men are permitted to wrestle for any woman to whom they may take a fancy, and if victorious, they carry off the belle, whether she be married or single. An Indian here entered the camp from whom Matonabbee had purchased one of the stoutest and therefore most valuable of his wives, and demanded to wrestle for her according to custom. As Matonabbee knew he had no chance of success with an adversary so athletic, he was fain to avoid the difficulty by re-purchasing his wife. This he did with evident mortification and ill humor. It may be easily conceived how inconvenient this queer custom must be. A weak man has no chance to retain a wife at all—and even a strong one has no security against being overpowered at any time.†

At length the party arrived at Copper Mine River, and here Hearne beheld one of those terrible butcheries so characteristic of savage life. The inducement for the Indians to accompany him was the hope of waylaying and cutting off parties of the Esquimaux, with whom they had a feud. Soon the spies reported that they had seen five tents about twelve miles below. Instant preparation was made, and it was determined to steal upon their victims. It is surprising how much of unanimity, order and discipline these red devils preserve, whenever a deed of blood is to be done, although at other times they are continually wrangling. Each man first painted his target, some with a representation of the sun, others of the moon, and several with pictures of beasts and birds of prey, or of imaginary beings, which they affirmed

*Hearne, p. 78-80. †Hearne, p. 93.

to be denizens of the elements, upon whose assistance they relied. They then moved with the utmost stealth towards the tents, taking care not to cross any of the hills which concealed their approach. When they arrived within two hundred yards they made their last preparation. They tied up their long black hair in a knot behind; painted their faces black and red to give them a hideous appearance; rolled up their sleeves; and some to render themselves light for running, threw off their jackets and stood armed naked to the breech cloth. At about one o'clock in the morning they rushed from their concealment with yells of fury. The unfortunate Esquimaux, men, women and children, hastened out of their tents and attempted to escape, but they were surrounded and all were murdered in cold blood. "The shrieks and groans," says Hearne, "of the poor expiring wretches, were truly distressing; and my horror was much increased at seeing a young girl about eighteen years of age killed so near me that when the first spear was struch into her side, she fell down at my feet and twisted round my legs so that it was with difficulty that I could disengage myself from her dying grasp. As two Indian men pursued this unfortunate victim, I solicited very hard for her life, but the murderers made no reply till they had struck both their spears through her body, and transfixed her to the ground. They then looked me sternly in the face and began to ridicule me by asking "If I wanted an Esquimaux wife," while they paid not the smallest regard to the shrieks and agony of the poor wretch who was turning round their spears like an eel.*" In this journey Hearne followed the Copper Mine river to its mouth, where he observed the tides, and the relics of whales. From thence he returned by way of the Athabasca Lake. In this neighborhood they discovered by accident, a young Indian woman who had lived entirely alone in a small hut, for eight months. She had been taken prisoner by the Athabasca Indians, and attempted to escape to her own people, the Dog-ribs, but had gotten lost. She had six inches of hoop iron made into a knife, and an arrow-head for an awl. For subsistence she snared partridges and rabbits. She seemed quite contented. Hearne reached the fort in June, 1772, after an absence of near eighteen months.

CHAPTER II.

Rivalry of English and French traders-Rise of the Northwest Company—Its efficient organization—Remotest northwest Fort—Inactivity of the Bay Company—Energy of the Northwest Company—Their ill conduct to the Indians—First visit to the Rocky Mountains—Mackenzie's first voyage—Singular Indian superstition—His discovery of the Arctic Sea, and return—His second voyage—Mountain scenery, &c.—Indians—Frazer's river—Land journey—Indians—Indian village on northwest coast—Their houses—Extraordinary religious temple—Chief's canoe—The Pacific Ocean—Fidler's trip—Frazer's voyage—Trading post west of mountains—Selkirk's Settlement—War of the rival Companies—Destruction of Selkirk's Colony—Act of Parliament—Treaty between the Companys—New charter—Re-establishment of Red River Colony—Ross Cox—Scrimmage at the Portage de la Montagne.

The charter to the Hudson's Bay Company does not define with much precision, the boundaries of the territory granted in fee to them.

*Hearne, p. 154.

Hence, subsequent to the treaty of 1763, the same rivalry continued to exist between the Canadian traders and the Bay Company, which had originated prior to that treaty; and whilst on the one hand the Company laid claim to an almost boundless territory, their opponents were for confining them strictly within the letter of their charter; and this was vague and indefinite.

For more than thirty years the regions north and west of Lake Superior, had been frequented by French adventurers, when some enterprising merchants of Montreal, in 1775, penetrated as far as the sources of the Saskatchawan and Athabasca rivers. These individuals, however, experienced much annoyance from the employees of the Bay Company, with whom they soon found themselves unable to contend separately. Consequently, in the year 1774, they united their interests, and assumed for their association the title of the "North-west Company of Montreal." Other small associations were formed about the same time, but they were all finally absorbed by this one. Its most prominent founders were British and Canadian merchants, among whom Messrs. Rocheblave, Frobisher, Frazer, McTavish Mackenzie, and McGillivray were the most prominent. These men had all been engaged in this trade individually, or as members of lesser companies—were intimately acquainted with the character of the Indian tribes—the topography of the country, and all the best methods and means of carrying on a thriving and profitable trade.

The organization of this new company was altogether in contrast with that of their rivals. The number of the shares was at first sixteen; it was then increased to twenty, and finally to forty. A certain proportion of them were held by the *agents*, residing at Montreal, who furnished the capital; the remainder were divided among the *proprietors*, each of whom took charge of an interior trading post. The clerks were chiefly younger branchs of respectable Scottish families. They entered the service as cadets or apprentices for seven yaars; after which they were placed upon salaries, which, with prudence, would yield a certain profit; and finally, if their conduct was good, they were received into the company as partners. Thus their ambition and their hopes were stimulated. In addition to this improvement of oaganization, they universally employed the descendants of the old *Courier de Bois* as *voyageurs*, or *canoe men*, in preference to all others; and incouraged them by hopes of advancement in station or pay, and of pensions in their old age. These *voyageurs* were admirably calculated by habit, education and natural disposition, for the stations in which they were employed. Passively obedient to their superiors, patient and persevering in their temper, gay, reckless, and thoughtless in their habits, capable of enduring an inconceivable amount of fatigue, and endowed with a wonderful aptitude for sliding into and adopting the characteristics of the Indians, they were of all men, the best fitted to ensure success to such an enterprise.*

Before the formation of the North-west Company, the remotest trading establishments of the British was on the Athabasca or Elk river,

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*Irving's Astoria, and Ross Cox's Narrative.

about twelve hundred miles north-west of Lake Superior, which had been founded by Messrs. Frobisher and Pond, in 1778.

When this new company first went into operation, the Hudson's Bay Company, with the characteristic inactivity of an ancient corporation guarded by charter, remained quietly at their posts, as the earlier French traders had done, and purchased such skins as the red man chose to bring them. The North-westers, on the contrary, penetrated the forest, passed the mountain barriers, sailed over the lakes, alarmed the Indians by their vigor and force, (to their eternal shame be it said,) destroyed them by their supplies of spirits and fire arms; and for a considerable period might be almost considered as masters of the continent between the Rocky Mountains and the great lakes of Canada. The fur trade, conducted as these men conducted it, was necessarily a decaying trade. The traders and Indians were solicitous only for immediate gain, and careless of the future. They slaughtered indiscriminately, the male and the female, the full grown and the whelp, without even much regard for the season; and of course, the trade became much more destructive and much less productive every year. As fast as their original hunting grounds became exhausted, this company pushed their posts and trading parties to the westward. It was a consequence of this course of policy, that the two great expeditions of Sir Alexander Mackenzie were made.

Before entering upon these expeditions, we ought to remark, that about the year 1789, a trading party had passed westward to the *Shining Mountains*, as they were called by the Indians. Here they were driven back by a force of hostile Indians.*

The Athabasca Lake is a basin thirteen miles in width, and two hundred miles in length, connected to the great Slave Lake by the Slave river, and supplied by the Peace river from the Rocky Mountains, and the Athabasca from the south. It is in latitude 59 deg. On its south-west end, Fort Chypewyan is situated.

From this fort Meckenzie started upom his first expedition in 1789. We regret that our space will not admit of our making liberal extracts from his journal. He was a man of fine intelligence, and of great vigor, courage and perseverance. He passed down the Slave river into the great Lake of that name, from the north-west extremity of which he found that a great river flowed, to which he gave his own name, which it bears to this day. To the mouth of this river he resolved to go. He accordingly entered the stream with his canoes, and in five days came to a camp of Slave and Dog-rib Indians. They asserted "that monsters of horrid shapes and malignant dispositions, had their abodes in the rocky caves on the banks, ready to devour whoever approached." Besides, they affirmed that it would take "several snows" to make the journey. One of them, however, was bribed to accompany him. Previous to his departure, a singular ceremony took place: "With great solemnity, he cut off a lock of his hair, and dividing it into three parts, fastened one to the upper part of his wife's head, blowing on it thrice with the utmost violence, and uttering certain words as a charm. The other two locks he attached,

*Greenhow.

with the same ceremony to the heads of his children." These Indians are described as a "meagre, ugly, and ill favored race; particularly ill made in the legs." A few old men had beards, a circumstance not common with Indians. Their cheeks were tattooed with two double lines, and their noses pierced for a quill or bone. Their clothing in winter was gorgeous, consisting of skins and furs, dressed with the hair on, and richly embroidered with quills. These Indians had never seen any whites, and were destitute of metalic implements. On the 11th of July, they landed at a deserted encampment of the Esquimaux. They found three houses, "the ground plat of which were oval, about fifteen feet long, ten wide in the centre, and eight at each end; the whole was dug about twelve inches below the surface, one half being covered with willow branches, and probably forming the bed of the whole family." The whole structure was formed of drift-wood, willow and grass. Soon after he reached the mouth of the river, and beheld for the first time, the great Arctic Ocean, filled with mountains of ice, between which the whales were engaged in their sports. The next day he commenced his return, by the same route, and arrived at the fort after an absence of 102 days.

On the 2d day of October, 1792, Mackenzie set out upon his second journey. He launched his canoe upon Peace river. Her dimensions were twenty-five feet long within, exclusive of the curves of stem and stern, twenty.six inches hold, and four feet nine inches beam. She was so light that two men could crrry her with ease. In this batteaux he stowed 3,000 pounds of provisions, arms, &c., and found room also for himself, seven Europeans, and two Indians. "Under a serene sky, with a keen but healthy air, the barque glided through some beautiful scenery. On the west side of the river, the ground rose in a gently ascending lawn, broken at intervals by abrupt precipices, and extending in a rich woodland perspective, as far as the eye could reach. This magnificent amphitheatre presented groves of poplar in every direction, whose openings were enlivened with herds of elks and buffalos; the former choosing the steeps and uplands, the latter preferring the plains.'* This river is broken by rapids and coscades, and they were compellod to make many laborious portages. The course of their journey led them through many populous beaver settlements. "In some places these animals had cut down several acres of large poplars; and they saw multitudes busy from sunrise to sunset, erecting houses, procuring food, superintending their dikes, and going diligently through all the labors of their little commonwealth." On the 10th June they met with some Indians. "These people were of low stature and meagre frame, round faces, high cheek bones, black hair, hanging in elf locks, and a swarthy yellow complexion; while their garments of beaver, reindeer, and ground-hog skins, dressed with the hair outside, having the tail of the hog hanging down the back, might occasion some doubt whether they belonged to the human race. Their women were extremely ugly, lustier and taller than the men, but much inferior in cleanliness. Their weapons were cedar bows, six feet long, with a short iron spike at one end. The arrows were

*Tytler's Historical View of Discoveries, &c., page 133.

barbed with iron, flint-stone, or bone. Their knives were of iron, worked by themselves. They used snares of green skin, nets and lines of willow bark, hooks of small bones, and kettles of watake, so closely woven as not to leak."*

On the 16th June they reached the banks of the great river flowing westward, which was the object of so much anxious expectation and protracted hope. Embarking anew, it was not long ere the party were alarmed by a loud whoop from the woods, and at the same moment a single canoe shot out from the mouth of a small tributary, and a number of natives, armed with bows and arrows, appeared upon the bank. After a short time, he succeeded in assuaging their fears, and entered into communication with them. Their information was discouraging. They represented the distance to the "Stinking Lake," (as all Indians call the sea,) as immense, and the nations along the river as ferocious, malignant and treacherous. Unappalled by these representations, he again embarked. Shortly after, they concluded to finish their journey overland. For this labor they prepared. "We carried on our backs," says Mackenzie, "four bags and a half of *pemmican*,† weighing from 85 to 95 pounds each, a case with the instruments, a parcel of goods for presents, weighing ninety pounds, and a parcel containing ammunition, of the same weight; each of the Canadians had a burthen of about ninety pounds, with a gun and ammunition, while the Indians had about forty-five pounds of pemmican, besides their guns. My own load, and that of Mr. McKay, consisted of twenty-two pounds of pemmican, some rice, sugar, &c., amounting to about seventy pounds, besides arms and ammunition. The tube of my telescope was also thrown across my shoulders, and we determined to limit ourselves to two meals a day,"‡

Their first day's journey brought them to an Indian encampment, where they saw, to their great encouragement, a spear of white manufacture, which the Indian stated they had purchased of a tribe farther west, near the "Stinking Lake." At night these Indians took a station at a short distance from their place of rest, and "began a song in a sweet plaintive tone, with a modulation exceedingly sweet and pleasing, and solemn, not unlike that of church music." They again pursued their journey, sometimes coasting along the borders of beautiful lakes—sometimes ascending high eminences, from which they could discern, in the distance, a long range of high mountains, which the natives by whom they were traveling, represented as terminating in the sea. In this part of their journey they beheld the richest scenery. Beautiful valleys watered by gentle rivulets, and adorned with umbrageous trees, were succeeded by ranges of hills capped

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* Tytler's History.

† This is buffalo meat dried and pounded, to which is sometimes added marrow-grease and fruit. It has been used time out of mind by the voyageurs, and it has always been purchased by travelers and men of science, for their support in their journeys. It is an Indian dish, no doubt, and this is the name given to it by the Chippewyans and Crees. The French call it taureaux, and the Siouxs pantigion. All the Indians in the buffalo regions make it always, adding cherries or other fruits, together with marrow-grease.

‡ Mackenzie's Travels, page 285.

with snow, whilst far back in the perspective rose a stupendous line of peaks, whose summits were crowned with the same spotless coronet, and partly lost in the masses of heavy and rolling clouds. The effect of sunrise or sunset must have been strikingly beautiful. How rich the contrast of brilliant light and dark shadows, of leaping cascades and quiet lakes, of cold icy peaks and deep green valleys!

After some days they at last came upon an Indian village. This was a village situated only about forty-five miles from the coast, and the inhabitants essentially differed from those east of the mountains in manners, habits, buildings, &c. The houses were constructed of wood. At a little distance, Mackenzie noticed some singular wooden buildings, which he imagined to be temples. They were oblong squares, about twenty feet high, and eight broad, formed of thick cedar planks, beautifully joined. Upon these were painted hieroglyphics and animals, executed with extraordinary accuracy. In the midst of the village was another strange building. The ground plot of it was fifty feet by forty-five. At each end were four posts fixed perpendicularly in the earth. These posts were unornamented, but they supported a beam of the whole length, with three intermediate props. Two centre posts at each end were carved into colossal human figures, supporting on their heads ridge poles. The hands were placed on the knees. Opposite to them were figures with their hands resting upon their hips. All these figures were painted red and black, and the sculpture manifested no little skill and accuracy in the execution. In the mechanical arts, also, they had progressed considerably. The canoe of the chief was of cedar, forty-five feet long, four wide, and three and a half deep. It was painted black, and decorated with white figures of fish. The gunwale, fore and aft, was inlaid with the teeth of the sea otter.

On the 20th of July, they beheld, for the first time, the broad expanse of the Pacific Ocean. The object of their journey was now accomplished. On the white surface of a rock which, from a height of several hundred feet, looked over the great ocean, Mackenzie painted with vermillion the following inscription: "Alexander Mackenzie, from Canada, by land, the 22d of July, one thousand seven hundred and ninety-three." Time has probably obliterated this inscription; but its assaults are made in vain upon the fame acquired by this indefatigable and daring discoverer.

This great western river is the one which has received the name of Frazer. On the 24th of August following, Mackenzie reached the fort at the Athabasca Lake.

Whilst Mackenzie was pursuing his journey to the Pacific, Mr. Fidler, a clerk of the Northwest Company, stationed at Fort Buckingham, on the Saskatchawan river, made a trip southwestward, to the foot of the Rocky Mountains. He seems to have traveled over the region watered by the head of the Missouri. He was so incompetent to the task confided to him, that the accounts he gave do not correspond with the descriptions of Lewis and Clark, and the world has learned nothing from his journey, save the fact of its having been made.

The expeditions of Pike, and of Lewis and Clark, excited the jeal-

ousy of the British fur traders. Pike had restrained their incursions upon the territory watered by the head of the Mississippi, and had shaken their influence over the Indians there. The movements of Lewis and Clark were vigilantly watched by these traders, and when they discovered their destination, immediate preparations were made to anticipate the Americans in the settlement of the Oregon territory. In furtherance of this project, a party was despatched by the Northwest Company, in 1805, under the command of Mr. Laroque, to establish posts and occupy territories upon the Columbia. This party, however, did not succeed in penetrating beyond the Mandan Village, on the Missouri. In the following year, (1806,) another expedition was entrusted to Mr. Simon Frazer. He started from Fort Chippewyan on the Athabasca Lake, crossed the mountains near the source of Peace river, and founded a trading post on a small lake, now called by his name, situated in the 54th degree of latitude. *This was the first settlement, of any kind, made by British subjects, west of the Rocky Mountains.* It is from him that the river discovered by Mackenzie derives its name. Other posts were subsequently founded in various parts of the country extending south to Fort Hall, and southwest to the mouth of the Columbia river, which, on the extinction of this company, became the property of the Hudson's Bay Company. The latter never founded any posts west of the mountains, previous to that period.

The repeated intrusions of the Northwest Company upon the territories claimed by that of the Hudson's Bay, induced the latter to attempt to imitate the policy of the former, lest it should be outstripped in the race for profit. They accordingly commenced establishing posts in various parts of the interior; and very soon, as might have been anticipated, their differences were aggravated into open hostility. They were all far beyond the authority of law, and an injunction in such a country would have had about as much force, and been treated with as much respect, as a ukase of the Emperor of Russia in the United States. Feeling themselves physically incompetent to self-defence, the Bay Company, for the first time, exercised their right as proprietors, to introduce a colony of civilized men into their territories. In the year 1812, they disposed of a considerable tract of land on the southern shore of Lake Winnipeg, watered by the Red river, one of its tributaries, to Lord Selkirk, a Scottish nobleman, who commenced planting there the germ of a new colony, by granting to individuals and families small tracts of land, (according to the English method,) reserving to himself a certain but moderate annual rent in perpetuity. It so happened that the very spot selected for this colony was the one at which the Northwest Company were in the habit of making all the *pemmican* necessary to supply the voyageurs thence to Athabasca, and over the mountains. The settlement would, of course, drive the buffalo away, and thus produce inconvenience to them. This was the true reason why they determined to trespass upon the lands of the rival company, violate the legal rights of Selkirk, and murder the unoffending men who had moved themselves and families from the home of their ancestors, to seek prosperity and happiness in a wild and unknown land. For several years previously, matters

had progressed to such a point of exacerbation between the two companies, that the Northwesters, with the unscrupulous ferocity which such a life as they led among the Indians inevitably produces, even in men of the best early training and education, had waged a vengeful and unsparing partisan war against the posts of the rival company. Sometimes they contented themselves with driving away their inhabitants; at others they cut off their means of support; again they would lie in ambush, and murder them in their routes; and finally, in the year 1814, they organized a powerful expedition against the Red River Settlement, which, after a war of two years, characterized by circumstances of barbarity and scoundrelism, which rivalled or surpassed that of their Indian allies and friends, the war was terminated by the cruel massacre of Mr. Semple, the governor of the colony, with all his intimate companions, and a total expulsion of all the survivors.

This is a brief outline of a course of conduct so lawless, so bloody, so ferocious, and so utterly unprincipled, that we marvel how the imagination of Mr. Irving could so far delude his judgment as to induce him to speak of such men and such atrocities, in language applicable only to deeds of heroism performed for noble ends. It is provoking to have the murders and robberies of a gang of outlaws, whose lives were scarce redeemed by one virtuous trait, and whose acts, if perpetrated within any civilized community under the sun, would have elevated them to the gibbet a thousand times over—celebrated by stooping genius as deeds worthy to be compared to the sublimest age of chivalry, when—if the ends were wrong—they were at least deemed by their pursuers, and the world, the noblest to which heroic valor could devote itself. The fact only shows, (if proof were needed,) that individuals of high genius and brilliant imagination may be totally blinded by the very excess of light; and that it is thus possible to sympathise deeply and sincerely with the guilty actors in the most atrocious deeds, and at the same time wholly overlook the suffering and the bloodshed of their innocent and unoffending victims.

This crowning outrage of the Northwest Company rendered it perfectly obvious that this contest between the two companies must result in the entire ruin of one or both of them. Their differences were brought before the British Parliament in June, 1819, and a debate ensued, in the course of which the conduct of the parties was minutely investigated. The Ministry then interposed its mediation and a compromise was at length effected, by which the Northwest Company was merged in that of the Hudson's Bay. At the same time, and in connection with this arrangement, an act "for regulating the fur trade and establishing a criminal and civil jurisdiction in certain parts of North America," was passed, containing every thing requisite to give stability and efficiency to the Bay Company. The contract between the two companies was signed in London in March, 1821.

Under the provisions of the above mentioned act, the King granted to the "Governor, and company of Adventurers, trading to Hudson's Bay, and to a number of persons representing the Northwest Company, the exclusive privilege of trading for twenty-one years, in all

the territories of Great Britain in North America, except such as are now formed into British Provinces." This grant was renewed in 1842, with some new provisions, chiefly respecting the treatment of the Indian tribes.

It is to be observed, that this charter has nothing to do with the immense region comprised in the original charter of 1670. Within that district they are lords of the soil. The heirs of Lord Selkirk having retroceded to them the title to the lands upon Red river, in 1836, they have replanted the colony originally founded by him. In that remote little colony, so many hundreds of miles beyond the remotest bounds of civilization, without good water communication to connect them with it, and consequently, as we should deem, destitute of the ordinary comforts of life, there are at this time about 5,000 persons,* the largest portion of whom are *Bois Brule*, (or half breeds) the remainder of them Scotch or from the Scottish Isles. But in our conjecture as to their destitution, we should be found upon examination, greatly mistaken. They have a Roman Catholic Bishop, a cathedral, and seven or eight other religious ministers. The company sell their land at 12s. 6d. per acre, and the plantations extend for fifty miles along the river. They cultivate wheat, barley, maize, and a variety of garden vegetables. Their farms are well supplied with stock, and they purchase their dry goods and groceries by exchanging the produce of their farms with the company's posts, or, (as we have seen them do,) carrying their products a cart journey of fourteen days to Fort Mandan. And recently, they have united their means, and sent an agent to St. Louis, who there purchases supplies for them—sends them up the Mississippi, by steam, as high as the head of steam navigation, where they are transferred to *pirogues*, and finally taken across to Red river in carts. We are afraid that the worthy bishop inflicts slight penance upon them, for the half breeds are said to be the fiercest warriors of the plains; and so late as the summer of 1845, a company of dragoons, commanded by Capt. Sumner, were sent to check their inroads upon the hunting grounds of the Sioux, and we believe they are still troublesome near the border.

Mr. Irving has dilated upon the feudal state of Fort William—its splendid hospitality—the lordly grandeur of its defences—the gorgeous display of its wealth and magnificence—its bountiful banquets, at which the wines of southern Europe gave zest to the game of the forest—and many "an auld world ditty" was sung to stimulate the boisterous mirth of its guests and inmates. But he has forgotten to add to this poetical enumeration of its faded glories, that at this same Fort William, situated near the head of Lake Superior, such a congregation of ruffians, bandits, and scoundrels was assembled as the world has not seen since the days when rape, robbery, and murder were the chief occupations of the inhabitants of feudal castles, and their bastions and parapets bristled with the swords and spears of all who were most base and brutal among mankind; that the tongues which chaunted with so much feeling the glorious songs of "bra' Robin Burns," were daily employed in instructing the ferocious and sanguinary sav-

* Simpson's Travels, chapter 8.

age how to murder and mutilate their fellow-beings—subjects of the same king—for no offence under Heaven but that of defending rights legally acquired and honestly exercised; that every drop of wine swallowed in these festivities was purchased at the cost of as much Christian blood shed by them in defiance of all law, human and divine; and that every dish upon the bounteous board cost the life of an Indian, deluded, debauched, stimulated, and finally sacrificed by them for the furtherance of objects the most mean and selfish, and the gratification of a malignity which could have had its birth-place no where but in the councils of a band of fiends and outlaws.

Mr. Ross Cox, who was a clerk employed by the Northwest Company, has given some accounts of these transactions, but as his narrative bears upon its face the marks of falsehood, as well as those denoting a total want of all proper feeling and all sound principle, we shall here add one or two anecdotes derived from, not a party concerned, but an innocent settler in Selkirk's Settlement, whom we met with at Fort Mandan, touching these atrocities.

Soon after the purchase by Lord Selkirk of the tract of land upon Red river, he discovered that his objects, laudable and legal as they were, were likely to be frustrated by the Northwest Company; and for this reason he purchased two hundred shares and became one of the proprietors in the Hudson's Bay Company, that by thus uniting their interests, his infant colony might have the protection of this ancient and powerful corporation. It was principally because of this connection that the direct war upon it was marked by auch unprincipled and atrocious conduct.

It is not true, as Cox states, that when the final struggle occurred at Red river, it was brought about by fourteen of the *Bois Brule* (or half breeds) who accompanied a party of carts and horses with provisions &c., in violation of the orders of M'Donnell, stationed at Q'Appelle river; nor is it true that the first order to fire was given by Mr. Semple, the governor of the colony. The facts are precisely the reverse of all this. It was an expedition gotten up by the partners of the Northwest Company, consisting principally of half-breeds, who are fully as much, or more ferocious than the natives, for the express purpose of crushing this settlement; and the force greatly outnumbered those employed in the defence. They did enter the settlement in violation of law—they did atack the settlers with a brutal fury known only to such beings—and they did crush the colony—murdering all its chief men, some of the women, and a number of children; burning their houses and devastating their fields, and levying by way of *black mail*, upon all its live stock.

A Mr. Clark, who had originally belonged to the Northwest Company, but who was tempted by better pay, as all of them might have been, to desert those who had some claims upon his gratitude, was placed in charge of the post at Athabasca. Here he was regularly besieged by his old friends. After living some time upon *pemmican* and horse flesh, he was reduced first to *wild rice*,* of which he had

* Wild rice is found in the greatest quantities on Wild Rice river, a small tributary of the Red river, in the territory of Iowa, but it is scattered along all the streams near the 49th parallel. It is in much esteem with the Sioux and other Indians.

carried a small quantity with him. At last, his rice gave out, and he was reduced to *tripe de rocher.** Finally, even this resource failed, and after inhumanly suffering many of his men to die of absolute starvation, he was compelled to surrender the post with all its furs and other property. Such proceedings as these forced their opponents to like conduct in self-defence, and for several years the different bands of Indians were hired to perpetrate indiscriminate slaughter.

Thirty or forty miles northwest of Fort William, is situated the great fall of the *Portage de la Montagne.* This tremendous cataract surpasses every other in the world, save only that at Niagara. The river for a few miles above moves with a slow and calm current. When its waters arrive at this immense terrace of rock, which is fully two hundred feet in width, they are precipitated in one broad, unbroken sheet a distance of one hundred and sixty feet. For many miles the hoarse roaring of the falling waters may be heard like the heavy roll of distant thunder; and when an unclouded sun pours its beams upon the scene, prismatic rainbows flash in innumerable curves over and around them.

In the year 1815, a party consisting of some twenty men, with six canoes, in the employment of the Bay Company, were descending through that long chain of small lakes and straits which so nearly unite the waters of the Atlantic to those of the Arctic Seas. When they had arrived at the usual place of landing, for the purpose of making the portage around this great fall, they turned the bows of their boats landward, singing the while one of those beautiful and affecting songs with which these hardy and adventurous *voyageurs* were wont to beguile the time, and relieve the fatigue of their laborious way. But they found themselves suddenly set upon by a band of half breeds, under the command of white men, who had lain in ambush on both sides of the river, immediately above the falls. The struggle was fierce, bloody, and unsparing, for the canoe men were fighting for a foothold, to save them from being precipitated over the falls, and their opponents were ruthlessly determined that no living being should plant his foot upon the soil. Two of the canoes succeeded in reaching the shore, and their inmates sprung to the land, with knife and pistol in hand; but one minute sufficed for their destruction. The other four canoes were kept out by the firing and the poles of the half breeds, until the curving current struck them; and then all parties were well aware that further struggle was vain. The half breeds ran yelling with delight to the very edge of the cataract, to witness the result. The canoe men sullenly folded their arms and seated themselves in silence to await their fate. Ah! who shall say what millions of thoughts rushed through their minds in those few fearful moments? The history of their whole lives was, no doubt, spread out in one broad picture, and they commended themselves to the protecting care of their patron saints, and of the Virgin. The

* *Tripe de Rocher* is a species of *lichen* (or moss) much used by the Indians and voyageurs. It is prepared by boiling, is not very palatable, but a good resource when threatened with starvation. Of the lichens used as food there are four varieties, viz: *Gyrophora Proboscidea*, *Gyr. Hyperborea*, and *Gyr. Mechlenbergie.* All of them are used as food, but the Indians reject all but the last.

canoes leaped forward, whirled over and around in their descent, scattering the *voyageurs* in every direction; and in another instant the majestic waters resumed their aspect of stern and solemn grandeur.

ART VI.—EDUCATION—NO. V.

BY JOS. ORMROD, ESQ.

INTELLECTUAL DISCIPLINE OF SCHOOLS—*continued.*

Miss Edgeworth, a lady who has done more for the cause of education, by her various publications, in disseminating correct views on the subject, than perhaps any other writer, concludes some observations on intellectual training, as follows:

"We do not mean to promise, that a boy judiciously educated, shall appear, at ten years old, a prodigy of learning; far from it: we should not even estimate his capacity, or the chain of his future progress, by the quantity of knowledge stored in his memory, by the number of Latin lines he has got by rote, by his expertness in repeating the rules of his grammar, by his pointing out a number of places readily in a map, or even by his knowing the latitude and longitude of all the capital cities in Europe; these are all useful articles of knowledge; but they are not the test of a good education.

"We should rather, if we were to examine a boy of ten years old, for the credit of his parents, produce proofs of his being able to reason accurately, of his quickness in invention, of his habits of industry and application, of his having learned to generalize his ideas, and to apply his observations and his principles: if we found that he had learned all or any of these things, we should be in little pain about grammar or geography, or even Latin; we should be tolerably certain that he would not long remain deficient in any of these; we should know that he would overtake and surpass a competitor who had only been technically taught, as certainly as the giant would overtake the panting dwarf, who might have many miles the start of him in the race.

"We do not mean to say that a boy should not be taught the principles of grammar, and some knowledge of geography, at the same time that his understanding is cultivated in the most enlarged manner; these objects are not incompatible; and we particularly recommend it to *parents who intend to send their children to school*, early to give them confidence in themselves by securing the rudiments of a literary education; otherwise their pupils, with a real superiority of understanding, may feel depressed, and may, perhaps, be despised,

when they mix at a public school with numbers who will estimate their abilities merely by their proficiency in particular studies."*

My last article was occupied in great part, by observations relating to the intellectual department of reading, or in considering the uses which could be made of the reading lessons of children, as a means of cultivating their understandings. The same talented writer, whose language I have just quoted, has some valuable observations which have a bearing on the same subject, and, although of considerable length, they are so much better than anything of the kind which I could myself supply, that my readers will kave no cause to regret their substitution if I here extract them : —

"When children begin to read, they seem suddenly to aequire a great variety of words; we should carefully examine whether they annex the proper meaning to these which are so rapidly collected. Instead of giving them lessons or tasks to get by rote, we should cautiously watch over every new phrase and every new word which they learn from books. There are but few books so written that young people can comprehend a single sentence in them without much explanation.

"It is tiresome to those who hear them read, to explain every word; it is not only tiresome but difficult; besides, the progress of the pupil seems to be retarded; the grand business of reading, of getting through the book, is impeded; and the tutor, more impatient than his pupil, says, 'Read on; I cannot stop to explain that to you now. You will understand the meaning of the sentence if you will read to the end of the page. You have not read three lines this half hour; we shall never get on at this rate.'

"A certain dame at a country school, who had never been able to compass the word Nebuchadnezzar, used to desire her pupils to 'call it Nazareth, and let it pass.' If they be obliged to pass over words without comprehending them in books, they will probably do the same in conversation; and the difficulty of teaching such pupils, and of understanding what they say, will be equally increased. Much of the future capacity of children seems to depend upon the manner in which they acquire language.

"If their language be confused, so will be their thoughts, aud they will not be able to reason, to invent, or to write with more precision and accuracy than they speak."

In another part of the same work (Practical Educatien,) are the following judicious remarks : —

"Spelling comes next to reading. New trials for the temper; new perils for the understanding; positive rules and arbitrary exceptions; endless examples and contradictions; till at length, out of all patience with the stupid docility of his pupil, the tutor preceives the absolute necessity of making him get by heart, with all convenient speed, every word in the language.

"The formidable columns in dread succession arise, a host of foes; two columns a day at least, may be conquered. Months and years are devoted to the undertaking; but after going through a whole spell-

*Practical Education.

ing book, perhaps a whole dictionary, till we come triumphantly to spell *Zeugma*, we have forgotten to spell *Abbot*, and we must begin again with *Abasement*. Merely the learning to spell so many unconnected words, without any assistance from reason or analogy, is nothing compared with the difficulty of learning the explanation of them by rote, and the still greater difficulty of understanding the meaning of the explanation.

"When a child has got by rote, 'Midnight, the depth of night;' 'Metaphysics, the science which treats of immaterial beings, and of forms in general abstracted from matter;' has he acquired any distinct ideas, either of midnight or metaphysics?

"If a boy had eaten rice pudding, till he fancied himself tolerably-well acquainted with rice, would he find his knowledge much improved, by learning from his spelling book the words — 'Rice, a foreign esculent grain?' Yet we are surprised to discover, that men have so few accute ideas, and that so many learned disputes originate in a confused or improper use of words. 'All this is very true,' says a candid schoolmaster; we see the evil, but we cannot new model the language, or write a perfect philosophical dictionary; and in the meantime we are bound to teach children to spell, which we do with less reluctance, because, though we allow that it is an arduous task, we have found from experience that it can be accomplished, and that the understanding of many of our pupils survive all the perils to which you think them exposed during the operation.' The understandings may and do survive the operation; but why should they be in unnecessary danger? and why should we early disgust children with literature, by the pain and difficulty of their lessons? We are convinced that the business of learning to spell is made much more laborious to children than it need to be: it may be useful to give them five or six words every day to learn by heart, but more only loads their memory; and we should at first select words of which they know the meaning, and which occur most frequently in reading or conversation.

"The alphabetical list of words in a spelling book contains many which are not in common use, and the pupil forgets these as fast as he learns them. We have found it entertaining to children to ask them to spell any short sentence as it has been accidentally spoken. 'Put this book on that table,' ask a child how he would spell these words, if he were about to write them down, and you introduce into his mind the idea that he must learn to spell before he can make his words and thoughts understood in writing.

"It is a good way to make children write down a few words of their own selection every day, and correct the spelling; and also after they have been reading while the words are yet fresh in their memory, we may ask them to spell some of the words they have just seen. By these means and by repeating at different times in the day, those words which are most frequently wanted, his vocabulary will be pretty well stocked without its having cost him any tears. We should observe that children learn to speak more by the eye than by the ear, and that the more they read and write, the more likely they will be to remember the combination of letters in words which they have con-

tinually before their eyes, or which they feel it necessary to represent to others.

"When young people begin to write they first feel the use of spelling; and it is then that they will learn it with most ease and precision.

"Then the greatest care should be taken to look over their writing, and to make them correct every word in which they have made a mistake, because bad habits of spelling once contracted can scarcely be cured: the understanding has nothing to do with the business, and when the memory is puzzled between the rules of spelling right, and the habits of spelling wrong, it becomes a misfortune to the pupil to write even a common letter."

"The shame which is annexed to bad spelling excites young people's attention as soon as they are able to understand that it is considered a mark of ignorance and ill-breeding. We have often observed, that children listen with anxiety to the remarks that are made upon this subject in their presence, especially when the letters or notes of grown up people are criticised."

I will only add to the above remarks on the subject of spelling, that, as a guide, to the orthography, pronounciation, and derivation of the English language, no book which I have seen is, in my opinion, so well adapted to the purpose, and so unobjectionable in all respects, as "*The Scholar's Companion.*" a work modeled on the plan of Butler's 'Etymological Spelling Book and Expositor.' It is a book well worthy of being introduced into every school, to be used permanently as the only spelling book.

I wish now to direct the attention of my readers to some other considerations intimately connected with the matters on hand. I have heretofore, in the course of my inquiries regarding a correct discipline and training for children and youth, repeatedly insisted upon the propriety and importance of basing our modes of instruction upon a knowledge of the human mind. The great importance which, in my estimation, attaches to that species of knowledge in all that relates to the science of education, makes me desirous of adding some further remarks to what I have already said upon that subject. If, therefore, I should occupy a page or two in the attempt briefly to explain and elucidate the uses and advantages resulting from the study of *mind*, I hope to be charitably dealt with, and that what I say on a subject, generally so much deprecated, may not be considered as being altogether irrelevant.

Ignorance of human nature—the nature of mind — is that which has occasioned the numerous defects to be found in the prevailing systems of instructions, and what still obstructs the progress of education, and obscures the principles we should adopt for our guidance. It is the fertile source of mischief in moral, religious, and legislative enactments.

The study of the human mind has much to recommend it, independent of the considerations which I have so repeatedly urged in its favor. It gives great comprehensiveness of thought, and affords one of the best disciplines which can be had for matured minds.

But, unfortunately, it has become the fashion of the day to ridicule and discredit this study, as something visionary, and of a character so

purely speculative, as to possess no kind of utility. It is frequently denounced as being concerned only with *abstractions*, *subtilities*, and *hair splitting niceties ;* but who thus speak or write, regarding the science of mind — be they in high or low station — are most assuredly ignorant of its nature and value.

They have not studied it, or sought in any degree to inform themselves in what it consists. And it would seem that before any one can be entitled to pronounce upon a thing, he must have some acquaintance with that thing. The old scholastic philosophy — which was indeed concerned with subtilities and artificial distinctions of no value — has left a stigma which, in the minds of many, still adheres to the modern science under the name of *metaphysics*. But the philosophy of the present day differs widely from that which was so diligently and exclusively cultivated by our ancestors some centuries ago, the study of the mind is only the study of *man*, and of those principles, many of which are universal and belong to the whole human family. No one will be found who has given due attention to the s ubject, to regret the time and labor so bestowed; while he who has adequately informed his mind in what relates to it, will, on the contrary be apt to say that in nothing which he has given his thoughts to, has he been more amply rewarded for his pains ; and, ten to one, he will be a man of enlarged views, of tolerant sentiments, and charitable feelings. "Do what we will," says an ingenious writer, "we mustphilosophise, well or ill, and the minds of the ignorant swarm with insect hypotheses; they forever generalize too soon and too much." It is not desirable then, I must be permitted to ask, that we should philosophise *well*, since '*philosophise we must?*'

True philosophy teaches us the nature of the operations of our own minds, and brings us acquainted with the laws which govern thought. It is the attainment of truth by means of reason. In the diligent prosecution of it, we get lessons which teach us how to regulate our minds, direct our inquiries, and guide our impulses. It is a fitting subject, truly, for ignorance to sneer at!

Mind is the chief instrument with which we operate in all we do or undertake. It is the medium of all the knowledge which can be acquired. It is surely then expedient that we should make ourselves acquaiented with the nature and powers of this instrument, that we may know how to use it to the best advantage.

What kind of knowledge is most useful to men in general? Is it not the knowledge of mankind, and the knowledge of self? And how is this knowledge to be obtained but by studying mind, whether by reading books on that subject, or, by reading and criticising men? Books contain the recorded experience and observations of men who have gone before us, and those among the wisest of their kind. Mind, in our conceptions of it, is a *something* positive and absolute; it is subject to certain invariable laws as well as matter. It has a constitution, and thought has a structure. By rightly prosecuting the study, we discover certain principles which are uniform and immutable, and which govern and direct the mind in all circumstances, and in all its operations. Shall we not then, when made acquainted with these laws, this constitution and these principles, be likely to wield

this instrument, the mind with far greater effect in the accomplishment of all our purposes in regard to it, than we otherwise should if left in ignorance of these things which constitute its nature and its powers. What we term laws, whether of mind or matter, are but facts with which we become acquainted.

The doctrine of the *association* of *ideas* serves to explain much of the phenomena of thought.

What are *prejudices* but wrong connexion between ideas? — the most common, while, at the same time, it is the most mischievous source of error. Habit also, has its foundation in the same law of association, and without its aid we could not persue any train of thought; we should scarcely have the power of reasoning or imagining.

It is true that the philosophy of the human mind deals largely in abstractions, which, in themselves are of no value; but relatively, and for the purpose of reasoning and comprehension, they are of unspeakable value and often indispensable.

They are abbreviated modes of expression, without the use of which our progress in knowledge would be slow indeed, and our ideas circumscribed within limits exceedingly confined.

But who is he in the present day, that has any pretensions to cultivation, or any command of language, and does not deal in abstractions? The contemners of mental science, themselves, make as liberal a use of the *reproachful things*, as do its advocates; nay, they resort to them more freely, often, but without an equal understanding of their uses and significance, The metaphysician, (if I may be allowed to use the term,) John Locke, did more for the development of human reason than all the other writers of his day put together, and certainly more than any one who had preceded him. He set the whole of civilized Europe to thinking, and many of her greatest geniuses to writing on the subject.

And his "Essay on the Human Understanding," cumbrous and unattractive as is the style in which it is written, and notwithstanding that some of his doctrines are exploded, may yet be read with profit. It still furnishes a good exercise for the mind favorable to independence of thought.

"The proper study of mankind is Man."

We study mankind by introspection, or by noting the operations of our own minds, and by observing the minds and characters of others in all the variety of circumstances in which man is placed.

Without attending to the operations of our own minds, and scrutinizing our motives of action, we know almost as little what passes there as what passes in other minds.

All will agree that it is of great advantage to us to turn our thonghts inwardly. We cannot prosecute the study of mind without doing this. If, therefore, the study possessed this single recommendation only, it would be sufficient to give it importance.

"It is by retiring within ourselves," remarks Dugal Stewart, "that we can obtain a key to the character of others; and it is only by observing and comparing the characters of others, that we can thoroughly understand our own."

These observations premised, it will, in my opinion, be no unprofitable use of our time, if, before I resume what I have still got to say on the subject of discipline, we take into consideration the state of the infant mind when first ushered into the world and new to existence.

Let us inquire, therefore, how it is first acted upon, and what are the circumstances with which it is ordinarily surrounded. We may thus get some indications of the principles that should govern us, and the course we should pursue in its after developments.

We can state nothing positive in regard to what mind is, in its intimate nature and essence, but we may affirm with reasonable certainty that all the ideas and knowledge we possess, have been acquired by means of what we orignally obtained through the medium of the senses. We know mind only as connected with matter. It has no intercommunication that we are aware of, with mere spiritual existences, and no other communication with the external world but such as it obtains through the organs of sense. Without these organs, we cannot conceive of its being anything, but must regard the infant faculties as mere susceptibilities, to be directed this way or that, for good or for evil, according to the circumstances under which they are excited into activity.

They certainly cannot act unless they have something to act upon. It is true that, according to the doctrine of phrenology — a science in which I have confidence — there is for each mind a peculiar organization; and our own observations confirm us in the knowledge of the fact, that some organizations are more and some less favorable for producing the desired developments and bringing about the wished for results; but on the principles of the same science, they all admit, to some extent, of being regulated and improved, or if not all, the exceptions are rare.

The first sensation experienced by an infant in its embryo state, is that of warmth merely.

The organs, with the mind itself, it is to be presumed, are there, but in a state of utter inactivity — torpid as it were, or by whatever other word we may more appropriately express their condition; for to all intents and purposes for which mind is efficient, they are a nonentity.

When the infant is fully introduced to the external world, it experiences other sensations — first those which come from the sense of touch, cold, and the sensation of pain when the air first rushes into the lungs. Soon the sense of hearing is developed, and sounds affect it; vision in a brief period performs its functions, and colors, with their many tints, present themselves.

But as yet the infant mind is not aware that there is anything from without — anything beyond its own consciousness — all its sensations are referred to self, and as being a part of self.

By slow degrees, and perhaps long after we presume it to have become familiar with external objects, as such, it learns that there are existences independent of its own sensations, and as constituting no part of self.

It meets with resistance while in the act of putting out its hand or its foot, and repeated experience of this at length forces upon its attention the knowledge. After this, it begins to discriminate between

one thing and another, to recognize persons and individualities. This much we may assert, with some degree of assurance, respecting the state and condition of mind in the first stages of existence, but it will not be worth our while, thus minutely, longer to pursue this curious inquiry, and attempt further to trace the progress of mental development at this early period, and during the first buddings of the infant faculties. The means, indeed, are wanting, which can enable us to do so; but were it otherwise, as has been remarked by a distinguished philosopher, and could we precisely ascertain the workings of the infant mind, many difficult problems in the science of mind would get solved.

It must suffice for our purpose to know that the mind of the child in early infancy, is vacant or unoccupied, and therefore, in a state that is unperverted with worldly notions, and untainted with worldly feelings. What it shall become then, depends very much, if not altogether, upon the circumstances under which it is brought into action, and upon the conduct and direction of those who are entrusted with its fate.

But what is the conduct, generally, of parents and others to whose guidance and influence it is submitted? Before remarking upon this question, let us consider the child when its mind begins to open and expand, and when it first begins to use the faculty of speech. It has, at this stage, already acquired a large stock of ideas which have been accumulating in its mind from various sources; but, as I before observed, it has everything to learn; and everything around it is a wonder and a mystery it is unable to solve.

The principle of curiosity within becomes active, and as soon as it obtains a sufficient command of speech to make itself understood, it seeks to gratify it by inquisitiveness. It has, no doubt, before this indulged its musings in silent wonder upon all the objects of sense which have attracted its notice. At length, and after many painful efforts, doubtless, and much difficult labor, it is enabled to articulate and embody its ideas in monosyllabic words after its own simple fashion.

It is eager for information concerning everything which has employed its thoughts, and would learn the causes and origin of all things. It inquires how the trees grow, and how seeds put in the ground produce plants. It is curious about the moon and stars, and would comprehend its own being. In its simplicity it regards its parents as all-knowing and all-wise, and asks of them questions which the profoundest philosopher would be puzzled to answer. The child, indeed, at this period, often manifests a craving for knowledge and a desire for information which might well shame the adult, who unimpressed with the wonders which surround him, takes no account of phenomena of nature, but gazes in stupid apathy at all the grandeur of the Universe.

When the child thus begins to seek for information, it has acquired no inconsiderable amount of materials for thinking; and if its faculties have not previously been in some degree perverted by injudicious treatment, it is yet in possession of all its native simplicity and ingenuousness; it is confiding and unsuspicious. Its mind is, therefore, in

a suitable condition to be operated upon advantageously, and mould to almost any purpose.

But as I before enquired, what is our conduct towards it at this most interesting period, when its mind begins sensibly to act and unfold its capabilities? when it is so ductile and as pliant as tempered clay? Are we sufficiently mindful of its susceptible nature, to guard it against all false impressions and evil influences? Do we seize upon and take advantage of that desire for information—that prying curiosity or inquisitiveness which so remarkably distinguishes it, to lead on its mind to a vigorous and wholesome development of the faculties? or does not the parent, equally with others, more frequently do what he can to repress and extinguish it by his indifference and evasiveness, if not by a treatment still more mischievous? How often is it the case that when a child, seeking for information, asks a question of its parent regarding some matter curious to itself, but distasteful to the latter, instead of receiving attention and a suitable answer, it meets with repulse and ill humor—'I do not know; you ask too many questions,' is perhaps the response; and if the question is repeated or followed by others, the child is probably driven away from him with the harsh words,—'go away, and don't pester me.'

The question is perhaps a simple one, and regarded by the parent as too trifling to merit attention; but he must recollect that it comes from a simple being, and one who, if always treated after this manner, will be likely to remain simple, and become trifling as a man. Frequently so treated, the child will cease to ask questions, and cease, perhaps, to indulge its inward musings on what seemed curious to its feeble conceptions; and we would not wonder if it should lose its sprightliness, and become more remarkable for stupidity than inquisitiveness. A child will ask many questions regarding what it cannot be made to comprehend, and then it will be the duty of the parent so to inform it, and say, 'I will tell you that when you get older and can understand it.' Any attempt to explain a thing which is above the understanding of the child should be carefully avoided, as tending to confuse its thoughts, and do an injury to its mind. There should be no attempts made to explain to a child of early years, words which convey abstract ideas; yet, on such occasions, when evasion becomes necessary, discouragement should be guarded against.

But there is another mode of treatment, or manner of receiving the enquiries of the child, not less commonly practised, and which is, perhaps, more heartfelt to its growing faculties than the one I have just been remarking upon; this is the reprehensible practice of giving a child witty instead of correct answers, cajoling and bantering it for amusement, and placing before its mind false and ludicrous images. This mode of treating the child is indulged in through a habit of thoughtlessness, or a want of reflection upon the consequences of a course which, to say the least of it, is certainly both inconsiderate and indelicate. Parents or others who commit this error, are little aware of the injury—often irreparable—which they thereby inflict upon the minds and morals of children. The child, when thus treated, soon becomes ashamed of its inquisitiveness, and gets its thoughts diverted from every thing which can strengthen or improve its faculties; it

loses its self respect—if in possession of any—and all respect for others, and soon becomes froward and ungovernable.

There is much reverence due to children. We should encourage and endeavor to satisfy their eager inquiries, and above all, carefully avoid giving them false information, ridiculing their imperfect conceptions, or deceiving them in any manner.

If a parent would always take a real interest in forming the mind of his child, carefully watch and assist its developments, and endeavor with a true sympathy, to satisfy its cravings for such knowledge as it is seeking, the child would come to regard him as an oracle of wisdom, and his influence over it would be almost boundless; he might, with correct views and a competent judgment, direct its faculties as he pleased.

But this presumes that there would be no interference with his plans, that others would act towards the child in the same way, and in conformity with his system and his wishes—that, in short, all the circumstances in which the child is placed are entirely favorable. Unfortunately this can hardly ever happen.

Circumstances are most frequently hostile or unpropitious, and the efforts of the parents, when rightly directed, are too often counteracted by the injudicious course pursued by others around him, and whom he cannot impress with the same views and cannot control.

Yet a careful and intelligent parent may accomplish much even in the worst circumstances.

[Intellectual Discipline to be continued.]

ART. VII.—GEOLOGICAL SURVEY OF MISSOURI.

From the beginning of our labors as journalists, we have continually kept in view the development of the mineral resources of Missouri, and have sought information upon this subject in every quarter where we had reason to suppose that it could be obtained. We had two objects in view: first, to give publication to such facts as had been discovered from time to time by our citizens; and second, to bring the question of a geological survey before the legislature of the State.

During the course of last year, our pages were enriched by a number of able articles on this subject, from the pens of both scientific and practical individuals; and we began to look with confidence to the legislature for a liberal appropriation to defray the expenses of a geological survey. The Legislature convened—and we were happy to find an able coadjutor in the Historical and Philosophical Society of the State, who, through their organ, S. T. Glover, Esq., presented a memorial upon the subject, so replete with argument and statesmanlike views, that we felt assured, for a time, that our labors would be

crowned with success. The junior editor of this journal, being a member of the Legislature, was honored by the Historical and Philosophical Society, with the presentation of the memorial, and was also appointed chairman of a select committee on a geological survey of the State. This committee, taking into consideration the large quantity of lands owned by the general government in the mineral districts of Missouri, considered it but just that Congress should lend its aid, and bear a portion of the expense of making known the value of the public domain. As the first step, therefore, towards carrying out this important object, the committee agreed upon the following memorial:

Memorial to the Congress of the United States, on the subject of a Geological Survey.

Sec. 1. Your memorialist, the General Assembly of the State of Missouri, would respectfully represent, that said State is possessed of vast agricultural, mineral, and commercial resources, in the development of which, her own citizens, and those of the United States, are deeply interested.

Sec. 2. No species of valuable mineral is found in any portion of the Union, that does not abound in Missouri, with the exception, probably, of gold and silver. Ores of iron, lead, tin, copper, zinc, mercury, cobalt, antimony, and nickel, mineral coal, and porcelain and other clays, fit for the manufacture of every class of stone ware, have been discovered in pure quality, and several of them in greater quantity than in any other part of America; while the fertility of her soil is not inferior to the best known.

Sec. 3. Notwithstanding the mines of Missouri, save in the single instance of lead, have never added any considerable amount to the common wealth of the State, or the Union. Several causes have retarded the development of her resources, to which your memorialist would respectfully invite the attention of Congress.

Sec. 4. The richness, extent, and importance of these resources have never been fully made known to the world; the mineral regions lie, generally, off from the navigable water courses, and far removed from any present medium of transportation; the State, owing to the pecuniary demands to which she has been subjected on other accounts, has never possessed the ability to remove these obstacles by appropriations of the requisite amount of money for the purpose.

Sec. 5. Your memorialist is of opinion, that at this time nothing would prove so valuable a means in opening the way to the full development of the vast natural resources of Missouri, as a thorough geological survey, and examination of her mines, soils, earths, rocks, water courses, and general surface. A memorial to this General Assembly, from the members of the Historical and Philosophical Society of Missouri, containing many valuable suggestions upon the subject, is herewith communicated. The General Assembly of Missouri, impressed with the importance of the considerations therein mentioned, and others presented to their minds, would, without further delay, proceed to execute a thorough geological survey of the State, but for the want of means to accomplish it.

Sec. 6. They, therefore, respectfully solicit of the Congress of the United States, the grant of one township of land in each of the United States land districts within this State, to be applied, in conjunction with such appropriations as the State of Missouri may provide for the same object, to the expense of accomplishing such survey; and your memorialist would respectfully pray, that the geologists appointed by the State of Missouri, to carry out the object of the grant, be authorized to select the lands while executing the work; and the said General Assembly do agree, in the event of Congress making the grant as proposed, carefully to husband the fund, and after defraying the expenses of the contemplated survey, to apply the residue to the establishment and endowment of a school of

Agriculture, Mining, Metallurgy, Chemistry, &c., which shall never be abolished by the State, nor suffered to fall.

SEC. 7. The donation of lands now desired, would be of incalculable benefit to Missouri, without imposing any burden upon the general government, which would be felt by her. Indeed, your memorialist confidently believe, that such a donation applied to such a purpose would give to the general government, in the enhanced value and readier sale of her lands, the increased population, and enlarged commerce from which her revenues are drawn, the greater facilities which would be afforded to the military and naval interests of the waters of the west, and the additions which might be expected to accrue to the general intelligence, resources, power and wealth of the Union, far greater advantages than could possibly be realized from retaining the trifling amount which is desired.

SEC. 8. Your memorialist would beg leave to refer to the fact, that Congress has frequently recognized the force of these suggestions, as touching the promotion of her own interests, and with that view has been induced to expend, at different times, large sums of money for geoligical surveys in the States of Illinois, Iowa, Wisconsin, and Michigan, which have done so much to stimulate, expand and develop the agricultural and commercial interests of the people residing therein. It is now executing a thorough survey of the Minesota territory. The people of Missouri have seen and felt the injury they have sustained by the superior attractions which have been added to their neighbors in this particular, by the munificence of Congress, and regretted that nothing of this character had been undertaken in Missouri, as well on account of their, as the interest of the general government.

SEC. 9. On a kindred subject a most enlightened policy has hitherto characterized the action of Congress; without referring to numerous instances, we beg leave to allude to the Atlantic and Lake Surveys — the examination of some of the rivers and harbors on the Pacific coast — the exploring expedition — the exploration of the route across the Rocky mountains, and an examination of the geographical features of the country on, and connected with, that route. Sustained by the strong hand of your honorable body, these surveys and explorations have been made, and have resulted not only in the development of our resources as a nation — fostering agriculture, commerce, and the mechanic arts, but have placed our government on the most elevated ground. Your memorialist believe that the hidden mineral wealth — the dormant agricultural power, and the capabilities of navigation, so remarkable in Missouri. would be fully developed by the execution of the survey now sought, and the valuable lands owned by the general government in this State would be rapidly selected — affording a home of plenty, comfort, and health to that best of all population — the tiller of the soil.

SEC. 10. It seems to your memorialist that after what has been done so bountifully for others, without solicitation as far as they are advised, the General Assembly of Missouri may have reason to expect as matter of right, from the Congress of the United States, the appropriation now most respectfully desired.

T. F. RISK,
Chairman of the Select Committee on Geological Survey.

This memorial was adopted by both branches of the Legislature and received the sanction of the Executive. Following up the plan shadowed forth in the memorial, a bill was introduced in the House of Representatives, which, among other things, provided for the appropriation of $10,000 towards paying the expenses of a geological survey, upon the condition, however, that Congress should make the donation asked for in the memorial.

This bill passed the House without a dissenting voice, and was sent to the Senate, where, owing to the stupidity or some strange whim of that angust and sapient body, it was laid on the table and there permitted to slumber until the close of the session.

Had this bill contemplated the commencement of a geological survey, involving the expenditure of perhaps $60,000, to be raised by the State in case Congress should not see proper to lend its aid, a wise precaution might have induced the Senate to pause and consider of the means of carrying out the measure; but when the State was in no wise committed unless Congress made the grant of land prayed for, we cannot conjecture the ground of the Senate's objection, unless it arose from an apprehension that if the mineral wealth of the State should be explored, and the facts made accessible to all the world, it would induce capital and enterprise to come here from other countries. Indeed such a conjecture is quite consistent with the spirit of Missouri legislation; for who can point to the law in our statute book that offers the slightest encouragement to emigration, or the transfer of capital from other States to this?

We have given a history of the legislative proceedings respecting this important measure that its friends may know where to lay the blame of its failure; for ourselves, we have labored arduously in its behalf from the commencement of the Western Journal to the passage of the bill through the House of Representatives. Nearly two years must now elapse ere the subject can again be brought before the Legislature of the State. In the meantime, our Senators and Representatives in Congress are charged with the duty of soliciting—nay, begging a donation of land to enable Missouri to make a geological survey, when she, herself, has refused to appropriate a single dollar for the purpose. In such circumstances, the member from Missouri who can rise in his place, and ask Congress to make the donation prayed for, without a blush, may rejoice in the possession of more brass than has, perhaps, ever fallen to the lot of any other member of that honorable body.

Had the bill passed into a law, it would have afforded evidence that we were in earnest, and that we really desired to enter upon the survey; but with what reason can we expect Congress to take the initiatory step, and place means at our disposal, when we have refused to declare, by a solemn act, that we will take upon ourselves the responsibility of making a proper application of their bounty? But should Congress make the grant, still the State can take no step in the matter, until the meeting of the next Legislature. The indefinite postponement of an object of so much importance, is to be much regretted by every friend of the true interest of the State; more especially at a time when we have a right to expect that an extensive demand will shortly spring up for our iron and coal. The construction of a railway from Cincinnati to St. Louis, may now be regarded as certain. Cincinnati has voted in favor of subscribing $1,000,000 to the work; St. Louis has voted in favor of subscribing $500,000, and the counties through which the road will pass, have voted nearly a million more; individual enterprise will make up the balance that may be required. But who doubts of the commencement of the great Pacific Railway within the next two years? The iron required to construct this road, if of the heaviest description of rail, will cost about $20,000,000. Missouri has metal sufficient to construct all these works, and perhaps a hundred others of equal magnitude; but owing

to the absurd policy of her statesmen, she is not likely to reap any of the advantages to be derived from furnishing the necessary material. We verily believe that the mines of Missouri are of infinitely more value, than all the gold of California; but while $6,000,000, 300 vessels, and 20,000 individuals have gone from the Atlantic ports within a few months in search of gold in California, we have not heard of the investment of a single dollar in the mines of Missouri.

How long the mineral wealth of Missouri is destined to remain unproductive, we are unable to predict; but although the Legislature has refused to aid in bringing it to the knowledge of the public, we are still resolved to collect and publish such facts in relation to it, as we can conveniently procure, for the benefit of our readers.

COMMERCIAL STATISTICS.

Comparative receipts of sixteen of the leading articles of Produce into the port of St. Louis, during the first four months of the years 1848 *and* 1849.

		1848.	1849.
Tobacco,	hhds.	899	540
	boxes,	2225	1505
Hemp,	bales,	7032	11567
Lead,	pigs,	137657	122891
Flour,	bbls.	102059	67467
Wheat,	bushels,	532973	374324
Corn,	bushels,	103004	90824
Oats,	bushels,	85098	46590
Barley,	bushels,	33824	21301
Rye,	bushels,	1898	2188
Beans,	bbls.	1605	760
	sacks,	1155	821
Beef,	tcs.	3403	1489
	bbls.	2118	2336
Pork,	bbls.	67725	81942
	tcs.	789	1038
	boxes,	100	1484
Lard,	tcs.	2778	8520
	bbls.	63109	50064
	kegs,	7703	8966
Bacon,	casks,	11938	14273
	hhds.	2468	1685
	bbls.	1454	1507
	boxes,	2733	1509
Butter,	bbls.	261	883
	kegs,	379	979
	jars,	16	214
Whisky,	bbls.	8949	11389

The foregoing table shows a falling off in some articles. We subjoin the following remarks from the Missouri Republican, from which the above table is taken :—" It must not be overlooked, however, that the California emigration has also given a new direction to more than one branch of the provision trade, and a very large amount of bacon, corn, oats, hay, &c., which would have, as heretofore, found this market, has been taken to St. Joseph, Weston, and other points on the Missouri, to supply the wants of the thousand of adventurers who are now about to commence their march across the Plains. From this to the close of the present month, should the weather hold good, but a limited stock of produce may be anticipated ; but after that period, and perhaps to the close of the season, the arrivals will, doubtless, increase, and should navigation continue unobstructed, we may confidently anticipate a very busy season."

[From the Missouri Republican.]

PORK PACKING IN THE WEST—NUMBER OF HOGS SLAUGHTERED IN THE PAST SEASON, &c.

It has been very difficult to arrive at the correct estimate of the number of hogs slaughtered in this part of the west; but with our own enquiries on the subject, aided by the kind assistance of some of our friends among the dealers in provisions, we are enabled to lay before our readers a statement which we rely on as mainly correct.

The Cincinnati Chronicle, at the close of the packing season, estimated the number of hogs killed on the Ohio and tributaries, at about equal to last year's report, though less at many of the prominent points. Say—

Ohio, Kentucky, Indiana, and Wabash	1,000,000
Illinois, Missouri, and Mississippi	581,000

making in the whole, 1,581,000, being 81,000 over last year's yield in the west.

Under this aspect of the subject, it is difficult to predict for the future, but as the stock is larger than it was last year, and the exports for the first quarter of the year to 1st of April, were about the same, it is most likely that no higher rates will prevail for the balance of the season than last year ; and without a further export demand, it looks as if the market might be depressed and lower prices would prevail.

The amount of exports to the Pacific will not equal the extra demand for the army last year, and hence, it is fair to infer, that we shall not occupy as favorable ground for good prices, and would caution our friends against large expectations.

The markets abroad are generally dull, and if the stock of meats on hand at this date, should remain in this country, there is no probable chance of any advance.

In regard to the article of lard, it does not appear that the stock is excessive. A large amount of meat was put up in long middles, and the price in the packing season was too low to induce renderers to use the side, and as a large amount is held by operators, who can af-

ford to lay out of their investment, it may be regarded as a safe article, and more likely to pay than brine meats.

The chief demand at this point, for California, has been for side bacon, and the stock here has been reduced, so that it may be relied on as likely to do well. The same may be said of shoulders, of which the stock is not equal to the average of last year, and the price may keep up to rates that will pay.

Below will be found a table compiled from the most authentic information, and which is believed to be in the main correct:

Hogs Slaughtered.

MISSISSIPPI.		St. Joseph,	11,000
Davenport,	2,500	Lexington,	12,000
Farmington,	6,500	Weston,	10,000
Madison,	6,000		
Keokuk,	34,000		72,200
Burlington,	20,000	ILLINOIS.	
Bloomington,	15,000	Chilicothe,	3,500
Hannibal,	25,000	Beardstown,	46,500
Rockport,	3,500	Canton,	18,000
Lagrange and Tully,	7,000	Tremont,	1,000
Churchville,	5,000	Bernadotte,	700
Louisiana,	6,000	Peru,	4,000
Warsaw,	15,000	Winchester,	2,500
Oquawka,	7,000	Florence,	3,100
Alton,	35,000	Naples,	3,500
St. Louis,	90,000	Quincy,	22,500
		Pekin,	30,000
	277,560	Griggsville,	7,000
MISSOURI.		Meredosia,	6,000
Kansas,	2,300	Peoria,	30,000
Linnville,	800	Lacon,	10,000
Arrow Rock,	1,000	Havana,	5,000
Camden,	6,500	Rushville,	5,000
Providence,	2,300	Lagrange,	4,000
Liberty,	1,700	Knoxville,	15,000
Glasgow,	1,800	Springfield,	1,000
Brunswick,	5,550		
On Grand River,	1,750		219,000
Rocheport,	2,500		
Alexandria,	13,000	Total,	568,760

COMMERCE OF GALENA.

We regret that we are not able to give a more complete and general account of the commerce of this important and interesting city. A friend at that place has promised to give us a history of its growth, commerce, &c., which we hope to be able to publish before long. In

the meanwhile, we publish the following report from the wharf master to the mayor and aldermen: —

To the Mayor and Aldermen of the City of Galena:

Gentlemen, — In compliance with your resolution of the 7th inst., I herewith submit a statement of the number of steamboat arrivals, tonnage and wharfage, number of keel and flatboats, quantity of lumber, shingles, laths, square timber, wood and miscellaneous articles, subject to wharf charges, within the city the past season. I have also endeavored to ascertain the quantity of lumber, &c., that has been delivered by steamboats or otherwise, and not subject to wharfage.

I have been furnished by our merchants with the number of pigs of lead, barrels of flour, bushels of grain, pounds of copper, and number of hides that have been sent forward to the southern and eastern markets during the above period; all of which I have embodied in my report. Its publication as a matter of reference, will be gratifying to many of our citizens, and may be the means of directing the attention of others to our trade and commerce — that will have a beneficial influence.

From March 17th to December 6th, arrived —

	Tonnage.	*Charges.*
259 steamboats,	36,065	$1,742 50
158 keelboats,	9,480	158 00
107 flatboats,		46 75
5,246,798 feet of lumber,		393 98
2,537,392 shingles,		76 87
672,000 laths,		29 37
26,596 feet of timber,		19 75
12,316 pieces of cooper stuff, &c.		3 67
2,088 cords of wood,		129 97
		$2,600 86

For which amount see receipts and reports on file.

Nine steamboats were admitted free by order of the City Council.

Arrived by steamboat or otherwise, free of charge —

620,000 laths, | 406,500 shingles,
365,000 feet of lumber, | 5,900 cords of wood.

5,611,818 feet lumber,	value, $72,953 63
3,005,118 shingles,	9,015 35
1,292,600 laths,	2,908 35
26,576 feet timber,	1,218 80
7,988 cords wood,	19,670 00
Cedar posts, staves, &c.,	897 54
Total value of imports of lumber, shingles, ect.	$106,663 67

From March 17th to December 6th, was shipped —

681,969 pigs of lead, 47,737,830 lbs.	value, $1,527,610 56
16,985 bushels of wheat,	9,341 75

3,467 bushels barley, - - - -	$ 1,040 10
13,491 barrels of flour, - - - -	43,845 00
7,128 hides, - - - .. - -	14,251 00
45,823 pounds of copper, - - - -	5,951 99
Total value of exports, - - . -	$1,602,050 40

JOHN J. CRUIKSHANK, *Wharf Master.*

GALENA, December 16, 1848.

COMMERCE OF CINCINNATI.

THERE is perhaps no city in this or any other country whose growth in population, commerce and manufactures, has been more rapid and imposing than that of Cincinnati; and upon this account a correct knowledge of the elements of her prosperity, and the facts connected with her commerce and manufactures, are of more than ordinary interest to the merchant, the manufacturer, the farmer, and political economist, and hence we have desired to procure well digested tables of her commerce and manufactures through a series of years; but we have not yet met with such, The following tables which we have taken from "*Cist's Weekly Advertiser*," are not without their value, but it is obvious that they are made up more for the purpose of *puffing* the "Queen City," than to enlighten the country in regard to the true condition of western commerce. That the commerce of Cincinnati is growing most rapidly, no one doubts; but who can form a just idea of its advancement from the following tables? Here we have the business of about seven months posted up against that of the preceding twelve months, and computed by tons, barrels, packages and pounds. The figures show a total for the seven months larger than that of the twelve. Had these tables compared the business of these seven months with the corresponding seven months of the preceding year, and instead of transcribing certain items, have given a complete list, we could then have formed a just opinion in regard to the increase of business. We observe that the imports of corn, cotton, wheat and some other important articles, have not yet reached the amount received during the preceding year; and one would like to know whether the imports of these articles are likely to fall off or increase. No notice is taken of sugar — the consumption of this article is a good index to the condition of the country; for a scarcety of money invariably lessens the quantity of sugar used by the great mass of the population. We notice that in the article of green hides, the quantity imported in the seven months, ending 9th April, 1849, exceeds that imported in the twelve preceding months by 232,147

pounds, and these figures are made to swell the total of quantities footed up at the bottom of the table. It would naturally occur to one that a small deficit in the number of hogsheads of sugar, would balance this mighty increase in green hides. But notwithstanding these tables do not exhibit the facts which we have desired to obtain, they may yet be found of value to our readers, and we have therefore transferred them to our pages with the comments of the editor.

The increase of business in Cincinnati, during the last six or seven months, is truly remarkable. As an evidence of the general fact, I transcribe from the Merchants' Exchange books the following items as specimens of the rest, together with the corresponding articles for the *entire year* previous:

IMPORTS.	1849.	1848.
Green Apples, bbls.	20,539	27,747
Butter, "	5,768	4,646
" firkins and kegs,	6,386	5,306
Blooms, tons,	6,307	1,398
Bran and shorts, bush.	13,393	3,721
Corn, "	183,613	260,598
Cider, bbls.	4,364	1,817
Cheese, boxes,	109,580	95,763
Cotton, bales,	6,262	8,334
Coffee, sacks,	49,298	50,570
Flour, bbls.	262,283	96,955
Feathers, sacks,	3,069	3,108
Fruits, dried, bush.	28,654	24,764
Glass, packages,	31,391	58,578
Hides, green, lbs.	242,976	10,829
Hay, bales,	9,565	4,685
Iron and steel, pcs.	125,406	125,920
" " bdls.	21,707	21,906
" " tons,	1,351	724
Leather, bdls.	4,185	4,087
Lemons, bxs.	3,680	1,110
Lime, bbls.	29,789	30,145
Liquors, pipes,	1,705	2,138
" packages,	269,336	242,809
" tons,	4,191	3,162
Molasses, bbls.	42,414	42,750
Malt, bush.	12,247	4,186
Nails, kegs,	34,746	35,796
Oils, bbls.	5,034	3,300
Oranges, boxes and barrels,	5,196	3,109
Oats, bush.	85,770	112,601
Oil Cake, lbs.	1,741,842	1,670,086
Raisins, boxes,	14,243	15,579
Rice, tcs.	1,731	1,450
Grass Seed, bush.	5,483	4,634
Salt, sacks,	42,623	27,304
" bbls.	56,757	57,023
Tea, packages,	5,551	2,228
Tobacco, bales,	930	731
Wines, packages,	5,541	2,482
Wheat, bush.	293,342	315,662
Quantities,	3,778,145	3,369,092

It appears, therefore, that our imports for but little more than seven months, being foom September 1 to April 9, 1849, exceed those of the entire previous twelve months, which had been the heaviest year's imports, up to that date.

Let us now examine the exports of the corresponding period. Of these I shall take our own products, either in provisions or manufactured articles.

	1849.	1848.
Beef, bbls.	11,942	13,413
tcs.	9,265	3,587
Beans, bbls	1,440	1,087
Brooms, doz.	2,413	2,746
Bagging,	3,997	9,453
Candles, lbs.	27,002	19,808
Cooperages, pkgs.	46,549	27,938
Elour. bbls.	221,493	129,651
Fruit, bush.	4,968	1,678
bbls.	3,583	1,097
Linseed Oil, bbls.	2,020	2,026
Pork and bacon, packages,	210,339	208,336
Rope and Twine, packages,	2,818	3,239
Soap, boxes,	8,492	7,389
Manufactures, pkgs.	73,716	18,513
Starch, boxes,	5,324	5,033
Tallow, bbls.	4,592	5,025
Whisky, bbls.	84,125	117,298
Quantities,	809,686	577,299

The disparity between the exports of the last entire year, and the seven months of the present, in favor of this, it will thus be seen is still greater in our exports than our imports.

RAILROAD TO SAN FRANCISCO.

A few days before the great fire in this city, we received a pamphlet containing the proceedings of a public meeting held in Boston, on the 19th day of April, 1849, convened by the friends of a railroad from St. Louis to San Francisco. Viewing this as an important movement in respect to a subject of general interest to the people of every part of the Union, we transferred to our pages the address sent forth by said meeting to the people of the United States. But that portion of our printed matter containing this address, as well as the pamphlet, having been consumed by fire, we regret that we have been thus deprived of the previlege of publishing it for the benefit of our readers. From one page of the proof sheets, however, that happened to be left in our possession, we are enabled to give the following outlines of the scheme proposed by P. P. F. Degrand, Esq., and adopted by the Boston meeting: —

It was proposed "that a company (*composed of men, in whose integrity and steadiness of purpose, confidence can be reposed by the nation,*) be chartered by Congress, to construct a railroad from St. Louis to San Francisco, with a capitol of $100,000,000, and that this company,

(after having paid in $2,000,000,) shall have the right to borrow United States 6 per cent stock, to such an amount (not exceeding $98,000,000) as may be sufficient to finish the road and carry it into full operation, with a double track." And further, "that Congress shall give the company a strip of public land, ten miles wide on the north side of the road, and the land for the bed of the road, and for depots, and the right to take from the public lands, wood, gravel, stone, iron, and other materials, necessary to construct the same; that immediately after the surveys are made, the company shall proceed to construct the road on the whole route, going to work at once on as many different parts as practicable; and building at different points, temporary roads, to be used while the permanent road is constructing," that "at points of any difficulty, two separate sets of men (relieving each other) be employed, to secure a continuation of the work, *night and day*, and that *at the most difficult points*, three separate parties of men (working each eight hours a day) be employed *to secure continual work, without interruption either by meal times or by night*, employing in all cases, as many men as can work to advantage, and having all sorts of work connected with the enterprise going on at the same time, on the route, and elsewhere, so that there shall be no delay which can be avoided, and that a line of telegraph be established, as far, and as fast as practicable, to transmit intelligence for the purposes of the road, and for the government."

We admire the spirit evinced by the Boston meeting in respect to the energetic prosecution of the work: we have resolved to make a trip to the Pacific on a railway, and we desire to see the work completed in as short a time as practicable, having proper regard however to the economy of its construction. But we wish to travel at as little cost as practicable, and we are apprehensive that if the road be made upon a principle that requires it to pay dividends to the owners, that we, and many others, shall not find it convenient to make a pleasure trip to the gold region. Indeed the merit of the enterprise will consist chiefly in the cheapness of travel and transportation across the continent. Very few articles of commerce would in our opinion be transported on this route, at rates that would pay reasonable dividends to stock-holders.

The author of the address says, "the adoption of this plan will secure the completion of the road, in as brief a space of time, as may be permitted, by its physical obstacles — AND WILL SECURE THIS BY A SINGLE ACT OF CONGRESS, free from the chance of future freaks of legislation. THIS IS THE DISTINGUISHING FEATURE OF MY PLAN,—

and it is free from the objection of absorbing the private resources of active men, and free from the risk of halting in this great work at every step, for the want of tangable means." These are doubtless important considerations; but we see no reason in case the general government should undertake the work. Why Congress may not by ONE ACT OF LEGISLATION provide the means necessary for its completion. Let Congress authorize the issuance of $100,000,000 of stock, or such amount as may be deemed sufficient for the purpose, and by the same act appropriate the proceeds arising from the sales of the public lands to its redemption; put the road under contract, and let the stock be disposed of from time to time as the means may be required, and we are of opinion that there would be little to fear from subsequent freaks of legislation.

It is not our object however at present, to discuss the merits of this, or any other particular scheme, for carrying on this great work. We are much pleased to find that the people of Boston are alive to the enterprise. If the people of the United States can be fully awakened to the importance of the work, we feel no apprehension that they will fail to agree upon a plan of raising the money necessary for its construction.

OHIO AND MISSISSIPPI RAILROAD.

IN February, 1848, the general assembly of the state of Indiana, granted a charter under the above title, for a railway commencing at Cincinnati, (Ohio,) and passing through Vincennes, (Indiana,) to St. Louis. On the 29th day of March, 1849, the directors appointed by the legislature of Indiana, met at Vincennes and organised said company.

ABNER T ELLIS, was elected president, JOHN ROSS, treasurer, and BENJAMIN M. THOMAS, secretary. Active measures were taken by the president and directors, to insure the commencement of the work with the opening of the present season, and but for the failure of the legislature of Illinois, to grant the right of way, the work would in all probability have been commenced by the present time. Professor Mitchel, of Cincinnati, who made a survey of the route, reports the distance from Cincinnati to St. Louis, to be about 360 miles, and estimates the cost of making the road, at about $16,000 per mile.

The cities of Cincinnati and St. Louis, have been authorized by the legislatures of their respective States, to subscribe for stock in said work, and the citizens of each have respectively voted in favor of the subscription for $1,000,000, by Cincinnati, and $500,000 by St. Louis. The Counties near the contemplated route, have also subscribed, as we are informed, nearly $1,000,000, and further subscriptions are expected from other counties. These subscriptions are made by the counties in their corporate capacities acting under legislative authority. Notwithstanding the legislature of Illinois failed to grant the right of way through that State at its last session, yet the friends of the work entertain little doubt but that the next session will favor the work, and hopes are entertained that the executive will convene the legislature at an early day.

In point of importance, we regard this work as one of the first magnitude, (excepting always the Pacific railway,) and are of the opinion, that no line of improvement now contemplated in the United States, will prove more profitable to the stockholders. It is a section of the great central line, from the Atlantic to the Pacific, and uniting the two great central cities of the valley of the Mississippi, it is destined to become one of the greatest thoroughfares of travel on the continent.

PANAMA RAILROAD.

We learn from the N. Y. Courier and Enquirer of the 23d June, that the subscription books for the capital stock of this company, amounting to $1,000,000, were opened on the preceding day, and that the whole amount was taken before three o'clock. The subscriptions were principally by capitalists of the State of New York. The company acts under a charter from the Legislature of New York. Wm. H. Aspinwall, J. S. Hopkins, Henry Chauncey, James Brown, C. W. Lawrence, G. Kemble, Thos. W. Ludlow, D. Thompson, J. B. Varnum, S. S. Howland, D. M. Wetmore, E. Bartlett, and H. Allen, directors. The Courier and Enquirer gives the following synopsis of the charter and survey of said road:

No stockholder is individually liable beyond the payment in full of the amount of stock held by him.

The basis of the Company's operations is a grant or exclusive privilege, from the Republic of New Granada, to Wm. H. Aspinwall, John L. Stephens, and Henry Chauncey, for the construction of a railroad across the Isthmus of Panama.

Among the provisions are the following, viz:

An exclusive right to construct a railroad across the isthmus, with the right to use gratuitously all the public lands lying on the route of the road.

Eight years, if required, for completing it.

Twelve hours for transportation over it.

Transit for merchandise and specie free of duty.

A gift of about three hundred thousand acres of land, to be selected by the grantees from the public lands on the isthmus.

Iron, and all implements and materials for the road, provisions, and other articles, for the persons employed thereon, admitted free of duty.

Two ports, one on the Atlantic, and one on the Pacific, which are to be the termini of the road, and to be free ports.

Power to levy transit and warehouse duties, and to establish such tolls as the grantees may think proper.

Privilege to endure forty-nine years, subject to the right of New Granada to redeem it, at the expiration of twenty years after the completion of the road, on paying $5,000,000; at the expiration of thirty years, on paying $4,000,000; and at the expiration of forty years, on paying $2,000,000.

A deposit of 600,000 francs, (about $120,000,) as a security for the fulfilment of the obligations assumed, to be refunded with interest on the completion of the road.

Two and a half per cent. to be paid for the Government of New Granada, upon all dividends declared.

The results of the survey, thus far, show the following unexpected facilities for a railroad, viz:

Whole length, from sea to sea, not exceeding . .	46 miles.
Summit level, under	300 feet.
Curvatures, with no radius less than	1,500 feet.
Grade for about 26 miles, from Atlantic to Chagres river, nowhere exceeding (per mile)	12 feet.
From Chagres river to summit level, about 10 miles, nowhere exceeding per mile	20 feet.
From summit level, for about 3 miles, nowhere exceeding per mile	50 feet.

And thence descending about 7 miles to the Pacific.

Materials of stone and timber abundant, and of good quality; and an excellent harbor at Navy Bay, six miles distant from Chagres.

The right of way is secured, and the neutrality of the isthmus guaranteed by the government of the United States.

GREAT FIRE IN ST. LOUIS.

We do not publish an account of this disaster as an item of news, but for the purpose of recording some of the leading facts as matter of history. On the night of the 17th May, 1849, a fire occurred on the steamboat White Cloud, lying near the foot of Morgan street. The flames were soon communicated to the steamer Edward Bates, which, floating out and down the stream near the line of boats lying at the levee, the flames were communicated to a number of them as she passed, and in a very short time the whole line of shipping appeared as if enveloped in flames. From the boats the fire was communicated to some low wooden buildings above the corner of Locust and Water street, and also at other points below. The space on Water street from Locust to Chesnut, was entirely consumed. The buildings on both sides of Main street, from Locust to market, were also consumed, except four fireproof tenaments on the west side between Locust and Olive. The east side of Second street was consumed from a point commencing a little north of Pine to Market street. Both sides of Market, from Main to Second street, was consumed also. Below, and disconnected with this district, the fire again made its appearance, consuming nearly all the front on Water street, between Elm and Myrtle. Both sides of Main street, from Elm to Myrtle, and about half the block on the west side of Main, between Elm and Walnut. The east side of Second street, from Elm to Spruce, except two tenaments at the corner of Spruce and the west side of Second, between Myrtle and Spruce.

The true amount of loss sustained by this conflagration will probably never be known. In our estimation, however, it has been greatly exaggerated in many of the public prints. The President of the Board of Assessors, in his report made to the Mayor on the day after the fire, states the value of buildings destroyed at $502,290. We have seen no statement of the accurate amount of insurance that will probably be recovered on account of the real estate; but from facts coming

within our knowledge, we are inclined to the opinion that though there may be cases of individual loss, yet in the aggregate the assurance and the enhanced value of ground in the burnt district is quite equal to the value of the buildings destroyed. We know of one case of a single house, where the owners were gainers of at least $5,000, the ground having sold for more after the fire than could have been obtained for the house and lot before.

In an article which appeared in the Mo. Republican on the 28th May, over the signature of "A Citizen," the stocks of goods in the burnt district is set down at $1,654,495, insurance on the same estimated at $1,147,650. The boats and cargoes consumed are estimated at $439, 500, and insurance on same at $225,500. Another estimate published in the Union fixes the value of the boats and cargoes at $518, 000.

The following is a list of the steamboats burnt:—Taglioni, Boreas No. 3, Alice, American Eagle, Sarah, Montauk, Kit Carson, Timour, Acadia, Mameluke, Prairie, White Cloud, Edward Bates, Eudora, St. Peters, Red Wing, A. Hamilton, Martha, Eliza, Mandan, Belle Isle, Gen. Brooke, and Frolic, in all twenty-three. We are fully persuaded that the actual loss sustained is under $1,000,000, and no fire of the same extent, perhaps, ever took place that caused as little real suffering, or where so few individuals were rendered totally destitute. Many buildings are rapidly rising upon the ruins, and if the disaster had not been followed by the epidemic, a very large portion of the burnt district would doubtless have been rebuilt during the present season.

PERIODICALS, PAMPHLETS, &C.

The Economist.—This is the title of a weekly newspaper recently established at Cannelton, Indiana, edited by Charles H. Mason, Eeq. Occupying neutral ground in respect to politics, the "*Economist*" is devoted to subjects connected with the development of the natural resources of the West, but sufficiently deversified with other matter to make it interesting to the general reader. Upon the whole we esteem the "*Economist*" the best model for a useful newspaper that has come under our observation, and thus far the editor has done full justice to the design.

It is refreshing at such a time as this, when public men, and publishers of periodicals place their chief reliance and hopes of success upon the patronage of a party or particular order of individuals, to meet with one who posesses the genius to preceive, and the courage to advocate the true interest of all, without pandering to the prejudices of any. There is a moral dignity in such a course that challenges universal respect, and we esteem the patronage of such a journal, as indicating an improvement in the moral condition of the country. The "*Economist*" is published at $2 00 per annum—payable in advance. We tender to the editor our best wishes for the success of his enterprise.

De Bow's Commercial Review.—We have received the first number of the 7th vol. of this valuable work, and we are truly pleased that our friend De Bow has resumed his editorial labors. The "*Commercial Review*" occupies a place in our library, which we could not supply from any other source. Such a work published at New Orleans, is as necessary to the people of the West, as to those of the South, and we should be pleased to see it obtain a general circulation throughout the valley of the Mississippi. The number before us, contains a large amount of valuable matter.

Practical Hints on the comparative cost and productiveness of the culture of cotton, and the cost and productiveness of its manufacture, addressed to the cotton planters and capitalists of the South. By Charles T. James, of Rhode Island. This is a pamphlet of about 70 pages, containing many excellent views in respect to the economy of manufacturing cotton in the South. The author

says, that for more than twenty years, his time has been devoted to the manufacturing business in all its details, and that during that time he has constructed either in whole or part, between twenty and thirty cotton factories, and put in operation, between two and three hundred-thousand spindles.

The experience of the author gives more than ordinary weight to the facts and views contained in his book. We are indebted to H. Smith, Esq., of Louisville, Ky., for the privilege of perusing this excellent pamphlet.

GRATITUDE.

FROM AN UNPUBLISHED WORK ON NATURAL AND MORAL ECONOMY, BY THE SENIOR EDITOR.

Gratitude is a state of mind arising from a sense of benefits bestowed upon ourselves or upon others, involving emotions more or less pleasing and profound according to the nature and extent of the benefit, the relation of the parties, and the circumstances in which they are respectively situated. This state of mind is the source of desires which prompt us to make a suitable return to the benefactor, to declare his benevolence, and to improve and extend the benefits conferred. These desires are essentially moral, social, and, by a beautiful provision in the economy of nature, our grateful emotions are reflected upon the heart of the benefactor, producing in him a state of mind in many respects corresponding to our own.

But it is important to bear in mind that the degree of pleasure experienced by the benefactor depends upon the nature of his motives; if these be purely benevolent, his pleasure must exceed that of the recipient: it may not be so intense, but is more refined, and free from that deep sense of obligation which mingles with gratitude.

If, however, one should aim to gain an advantage over another by acts of apparent benevolence, or should be moved by an overweening desire for popular approbation, he could not sympathize with the recipients of his bounty; for this is not the reward which he sought, and a consciousness of demerit would prevent that agreeable state of mind which can only be enjoyed by the truly benevolent.

But the sense of gratitude is not limited to such as are immediately connected with a benevolent action. It is experienced, in a modified degree, by every generous mind to whom it is made known; and thus we may perceive what a rich reward awaits the truly benevolent individual, and how admirably the sentiment produced by a good action is made to multiply itself.

Every act of benevolence establishes a new relation between the parties, governed by laws, which each are respectively bound to observe. To entitle one to the rewards of benevolence, his motives must not only be pure, but his conduct free from suspicion; for there is perhaps no action more abhorent to the human mind, than that which is designed to place one in the power of another by exciting his gratitude. One who watches our wants, and coldly calculates the advantages which he may obtain by affording relief at the time of our greatest need, meditates the perpetration of a deed more detestable than robbery. Armed with the instruments of violence, were he to meet us on the highway and denand our property, we should be free to deliver or defend; and, should we resist the demand and do battle in defence of our rights, our conduct would recieve universal approbation. But, when assailed under the garb of benevolence we are disarmed, and bound with cords that may not be broken, without danger of incurring the charge of ingratitude and the condemnation of every generous mind.

Moreover, if the benefactor should imprudently publish his own deeds, or, by word or action unnecessarily remind the recipient of his obligation, such conduct would cancel his claim, and abolish the relation established by his benevolence.

But the fruits of benevolence are often blighted by the selfishness of the party benefited: for there are those who are incapable of conceiving the idea of a disinterested action, and look upon every generous or charitable deed as proceeding from unworthy motives. In the hearts of such individuals there is no place for gratitude: and, instead of improving the benefits which they receive, whatever is be stowed upon them may be regarded as lost to the rest of mankind.

The benefited party is constituted the steward of the benefactor: and unless he improves that which he receives, the stock of benevolence would be exhausted, and but little social improvement would ensue. If like the slothful servant, he should conceal the benefit bestowed upon him, and not put it at usury lest the benefactor should gather where he had not strown, he would violate the laws of benevo-

lence, for indeed it is the privilege of the benevolent to reap where they have not sown: it is the duty of the recipients of their bounty to sow for them, to the end that, the fruits of benevolence may be multiplied, and, abound throughout the earth.

Welling up pure from the depths of the heart the emotions of gratitude overflow the barriers which self love and artificial observances raise between individuals of different conditions, opening the way to mutual sympathy and social intercourse; and, as the streams and rivulets from mountain and valley flow into the ocean, and their waters return again in generous showers and gentle dews to refresh the earth, and make glad the heart of man, so do the fruits of benevolence descend upon the benefactor.

One that has heard the faltering accents, and seen the moist eye of gratitude — his own heart growing warm and full the while — has tasted of the richest moral banquet allowed to man, a feast to which none can gain admittance except the truly benevolent.

Yet, there is a higher source of gratitude than human benevolence: but, as we can add nothing to the happiness of Him from whom we receive our being how shall we requite His goodness? the word of inspiration answers this inquiry. Love thy neighbor as thy self, do unto others as you would they should do unto you, be charitable, just, and merciful; and, if this is not sufficient forthy boundless gratitude, love your enemies, and pray for those who dispitefully use you.

TO THE PATRONS OF THE WESTERN JOURNAL.

The publication of the *Western Journal* having been suspended for three months, it is due alike to our patrons and to ourselves, that the causes which prevented its regular appearance should be made known.

Owing in part to the sickness of one of our publishers, the printing of the May number was delayed somewhat beyond the usual time; this number however was printed, and two of the five forms in which it was worked off, had been sent to the binder, who, dying of the cholera a few days before the occurence of the great fire, the other three forms remained at the printing office, and were consumed.

Our enterprising and worthy publishers, Messrs. Charles & Hammond lost their entire establishment; the smallest article was not saved from the flames. The other printing establishments had also suffered so much by the fire, that we concluded that the immediate reprinting of the May number was out of the question; and made up our minds to wait until Messrs. Charles & Hammond could replace their presses and materials, by purchases in Cincinnati. This they effected with great energy and dispatch; but when they were again ready to proceed with their business,—owing to the cholera which was then raging to a fearful extent—they found it impossible to procure sufficient labor to enable them to progress with our work.

And finally we have been compelled to get the printing of this number completed at the office of the *Union*, which, having escaped the fire, was better able to keep its operatives together. Those who are familiar with the terrible disasters to which our city has been subjected for the last three months, will be able to appreciate the difficulties by which we have been surrounded; and we trust that their confidence will not be impared by our late misfortunes. Our patrons will loose nothing by this temporary suspension in the end. The twelve numbers of the 2nd and 3rd vols. will be furnished to our subscribers; but our editorial year will close with the month of March, instead of December, provided we meet with no further misfortune.

We trust that it will not be considered indelicate in connection with this subject, to call the attention of those who have not paid for the current volume, to the importance (to us) of making IMMEDIATE PAYMENT. We can scarcely suppose, that there is one of our subscribers who cannot without inconvenience pay the small amount which is due to us; these small sums are to us of great importance, and at the present time absolutely necessary. Those residing at a distance are authorized to remit by mail.—EDITORS.

THE

WESTERN JOURNAL.

VOL. II. SEPTEMBER, 1849. NO. VI.

ART. I.—THE ECONOMY OF SOCIAL COMBINATIONS—MISSOURI LAW OF CORPORATIONS.

Believing that a law authorising individuals to form associations, with corporate privileges under certain regulations and restraints, would tend to stimulate industry and enterprise, to encourage the introduction of manufactures, and the useful arts, and, promote the development of the natural wealth of the State, we published in the tenth number of the *Western Journal* an article on "corporations for industrial purposes," with the design of bringing the subject to the ttention of the general assembly of Missouri. And that body having at its last session enacted a law authorising any three or more individuals to form associations, with corporate privileges, for the purposes of manufacturing, mining, and other industrial pursuits, we deem the publication of this law as affording a suitable occasion for a brief article on the economy of social combinations. We are fully aware that important changes in the pursuits and political economy of a community cannot be suddenly effected: pursuits long established, though they may not be profitable, can rarely be abandoned without sacrifice; while on the other hand the pioneer has many difficulties to contend with, which none but ardent and heroic minds have the courage to encounter.

But all things must have a beginning: and if we should be instrumental in establishing the commencement of a policy, which, in our judgment, is calculated to improve the intellectual and moral condition of the people; to develop the natural resources of the country; to increase its wealth; and, finally lead to a higher state of civilization than has hitherto been attained by any other people,—we shall rejoice in our labor, although the progress of improvement may be slow, and the fruits be reserved for the enjoyment of others.

The inherent principles of man's nature, undergo no change in his advancement from barbarism to the highest state of civilization, yet, in the development of these principles, their operations are modified by innumerable causes, which conspire not only to distinguish the inhabitants of one region from those of another, but also to produce important changes in the character of the same people.

As our relative position in respect to physical objects changes with

every step we make, so the discovery and application of a new power calculated to aid in the production of the appliances of human subsistence, and of comfort, occasion a change in the economy and social relations of a community. These new relations present a new state of facts for the study and investigation of the statesman, and political economist, and indeed, for all who are liable to be affected by them. The discoveries which have been made in physical science, and the important events which have occured within the present century, and more especially within the last few years, constitute a volume of facts, which are calculated to establish a belief that we are about to enter upon a new era in the history of civilization.

Important discoveries, and great events, however, are not necessarily fruitful of benefits: so far from this being the case, if the new relations which they establish should not be governed by wisdom they may be productive of evil instead of good; and in no event, can the benefits accruing from them exceed the intelligence, and moral design of those who give direction to their consequences. History abounds with instances, in proof of this assertion: we shall give but one, others will doubtless occur to the mind of the intelligent reader. The discovery and possession of the mines of South America and of Mexico, gave to Spain the control of a larger amount of the precious metals than ever fell to the lot of any other country of equal population. Here, was one of the principle agents of commerce and of civilization, placed under the control of a nation esteemed by many as the most enlightened of the age; and one whose local position was eminently favorable to the improvement of the advantages thus placed in her power. But the intelligence and social economy of the people of Spain did not expand in proportion to the enlargement of her resources; and in their ardor to increase their individual acquisitions, they neglected to improve their social economy; and failing in this essential point, Spain faltered in the march of civilization until she fell in the rear, and lost the respect of her neighbors. Will the acquisition of California and the discovery of gold in that region be followed by similar results in the United States? or, are the people of this country sufficiently enlightened in respect to the subjects of social and political economy, to give a wise direction to the consequences, and avail themselves of the advantages which these events place within their power? Time only can solve these enquiries. It is nevertheless our duty to examine the new relations produced by these and other recent events, to the end that, we may not only avoid the evil consequences, but make available all the advantages which these events afford.

Social combinations and social action only, can raise a people from a state of barbarism to a respectable degree in the scale of civilization: nor can the most elevated condition be sustained without the continual observance of this principle. Instinct, the principle of self preservation, impels man to form associations with his species, for the purpose of procuring subsistence and protection of person and property; but, when these objects are obtained and guarded by laws, the social action emanating from this principle ceases; and each individual seeks his own seperate interest with but little reference to the social

welfare. And when the selfish principle has thus far performed its social office, civilization can progress no farther, without the development and improvement of the mental and moral faculties. This is the dead point in the social machinery which has never yet been completely overcome by any people. Political and social institutions may afford the most ample protection to the personal liberty and property of the constituent, and leave him free to pursue his individual happiness according to the dictates of his own judgment; but if ignorant, or regardless of the power and advantages of social combinations, and social action, each should rely alone upon his own strength and intelligence, and act exclusively with reference to his individual interest, neither the rapid advancement of physical science, the acquisition of new territory, nor the discovery of unlimited quantities of gold, would add to the general wealth and prosperity of the nation. For, in a community where all act upon the selfish principle, while a few grow rich the masses fall into a state of poverty and ignorance; and these being destitute of natural wealth, as well as of the artificial agents of production, they can add but little, if anything to the wealth of the country. How is this difficult point in the progress of civilization to be overcome? This is the great problem of the age, and one that challenges the most profound reflection of the philanthropist. We are not so vain as to suppose that we have discovered its solution: we propose no new theory for the acquisition of wealth, or, for the attainment of happiness; but desire, simply, to call the attention of our readers to some of the favorable results produced in certain parts of this union through the agency of social combinations and social action: and, could the people of Missouri be induced to adopt a similar policy, this generation would not pass away before they would realise the proud boast recently made, by a distinguished citizen of the state of Massachusetts. In addressing a committee of the legislature of that State, Mr. Everette used the occasion to say, "we hear much at present of viens of gold recently discovered in Mexico, California, and elsewhere. In fact, we hear of nothing else. But I care not what mines may be found in the north, or in the south—in the wastes of Siberia, or in the sierras of California. Wherever the fountain of the golden tide may gush forth, its streams will flow to the region where educated intellect has woven the boundless nett-work of the useful and the ornamental arts. If the state of Massachusetts adheres to the same policy that has for the most part directed her legislation, a generous wave of the golden tide will reach her distant shores. * * * * * * * * * *

For me, may poor old rocky, sandy Massachusetts exclaim—

"'For me, the balm shall bleed, and amber flow—
The coral redden and the ruby glow—
The pearly shell its liquid gems unfold,
And Phœbus warm the ripening ore to gold'"

This beautiful extract has been copied into a number of the most respectable periodicals of the country, as a fine specimen of eloquence; and truly, in this respect it is not without merit: but we have seen no remark made in respect to the assumption that, the gold, and whatever else is rich and rare of every land, "will flow to the

region where educated intellect has woven the boundless nett-work of the useful and the ornamental arts." This is an important truth in political economy: and we regret that the distinguished orator did not proceed to enlighten the country in regard to the history of legislation in Massachusetts, so as to enable us to comprehend the nature of that policy which he says, "if adhered to," promises such glorious results. The mass of mankind are but little benefitted by the promulgation of abstract truths; none but inductive and philosophic minds comprehend their bearings, and appreciate their value; and therefore, one who aims to enlighten mankind, in general, must furnish them with reasons as well as with facts. The orator, soaring in the regions of the sublime, aims to electrify and dazzle his auditory, rather than to enlighten their minds by showing the connection between cause and effect, and tracing the sequences of events from the primary cause, to the final result.

We do not claim to be well acquainted with the history of legislation in Massachusetts; but, judging from some of the leading measures of that State, we conclude that her people more fully comprehend the advantages of social combinations, and of social action, than do those of any other country. The encouragement of education may be regarded as the most important feature in her social institutions. Through the means of this enlightened policy, every class of her citizens are enabled to bring an "educated intellect" to the aid of their physical powers in the prosecution of their respective pursuits; and every mind is employed in the discovery of new powers, and new agents to assist in the production of wealth, and to lighten the burthen of labor. A community thus enlightened, could not fail to discover the advantages of social action, and, acting through the medium of the legislature, they have, we believe, given the most liberal encouragement to associations formed for industrial and commercial purposes.

The commercial associations of Massachusetts, of which her banking institutions are the most prominent, have been made efficient agents in the development of her resources. In a territory of about one-eighth of the size of the state of Missouri, there were in 1848, one-hundred and twelve banks, with a capital of $32,985,000. Through the agency of these banks, the people are supplied with a currency, which, for most local purposes performs the office of the precious metals; and owing to the fact, that, they afford facilities to all classes, and to every department of labor, according to the nature of the pursuit, and degree of credit to which individuals are entitled, they tend to encourage habits of industry and economy, instead of exciting that spirit of speculation and extravagance which has rendered them odious, and neutralized their benefits in other communities.

The manufacturing establishments, and works of internal improvement in Massachusetts, owe their existence to the same principle of social combination: and the latter especially could never have been accomplished by unassociated capital.

In these two branches of Massachusetts' enterprise alone, there has been invested, a sum not less perhaps than $100,000,000, the an-

nual interest of which, in the form of dividends, may be fairly set down at $6,000,000. This sum, being profits accruing from the capital invested, is drawn almost entirely from other countries, principally from the southern and western states of the union. But more than this, the profits accruing from the labor and skill to which these investments give employment—also the enhanced profits of real estate, and of agriculture—are likewise paid by those who reside beyond the limits of the State.

Possessing the power of collecting so large a tribute from other countries, it was no empty boast on the part of Mr. EVERETTE to declare that, "wherever the fountain of the golden tide may gush forth, its streams will flow to the region where educated intellect has woven the boundless nett-work of the useful and the ornamental arts," and that "if the State of Massachusetts adheres to the same policy that has for the most part directed her legislation, a generous wave of the golden tide will reach her shore"; and in this connection there is not less truth than poetry in the beautiful lines quoted at the close of the paragraph.

But how much gold will Missouri get from the sierras of California? We have seen accounts of the shipment of several millions from that region, and although much of it has been obtained by the labor of individuals from this State, yet, we have not heard that any has yet reached our borders, except perhaps as specimens. It goes to the eastern cities and to Europe; where it can be exchanged for the products of the useful and ornamental arts, and to aid in their further advancement. Thousands of our enterprising young men, our greatest treasure, have gone to California, and thousands will follow if the accounts continue favorable: many will never return—but should all return, laden with gold, yet, but little would remain to enrich our own State; it would only be thus far on its way to the eastern States, and to Europe, to be their exchanged for commodities that could be produced at a less cost in Missouri.

In the present condition of the people of Missouri, the discovery of gold in California may be regarded as calculated to retard, rather than promote their prosperity. It is drawing off our most enterprising and efficient population, and transfering it to a region with which we have no commercial intercourse; and, what is still more to our disadvantage whatever our citizens produce, in that country, goes to increase the commercial and manufacturing power at points which already control the profits of our labor. If the people of Missouri desire to profit by the "golden tide," and remain at home, they must encourage the "useful and ornamental arts;" build manufactories, and construct works of internal improvement; then, it will matter not what direction the gold of California takes when it leaves the mines, the current in its meanderings will reach our borders, and flow through our territory in generous streams. It will come to represent our machinery; to be employed as an agent of exchange between the proprietor and the operative; and between the producer and consumer of raw material. It will come to represent the value of our works of internal improvement; to represent the enhanced value of real estate; and to be exchanged for the products of the useful and ornamental arts.

It was predicted, some fifteen years ago, by a distinguished statesman, that, if a certain measure should be adopted by Congress, then gold would flow up the Mississippi river. This measure was adopted: and, in effect, it imposed upon gold an export duty of about nine per cent.; and there being no duty imposed upon its importation, it was natural enough to imagine that it would flow from every land to our shores, in waves so strong that the tide would reach the sources of our rivers. No statistics have been preserved, we believe, showing how much has ascended that arm of the "inland sea," which washes the border of Missouri: that the tide however, has at certain seasons reached our shore is quite certain, but, the flood is of short duration, and, as if in mockery of legislative regulations, a reflux immediately ensues, carrying it back to the ocean; except perhaps, a small amount that is retained, for a short time, by locks and bars, in the vaults of the banks.

We do not allude to this measure for the purpose of disparaging its merits, but, simply, to prove that the natural laws which govern the circulation of money, though subject to modification, cannot be abrogated by legislative enactments.

We are happy to discover that in some of the southern and western states, the people are beginning to comprehend the great principle in political economy, which we have here endeavored to illustrate; the experience of many generations has taught them that, notwithstanding a few individuals may grow rich, yet, the community must become poor, unless its constituents combine to develop its resources. And wherever this fact has been appreciated, the people have not lacked the means of achieving the most important enterprise: manufactories have been established; the mineral wealth developed; and rail-roads constructed, by social combinations; while to the astonishment of those whose understandings have been darkened by old prejudices, there is more money in the country when these works have been accomplished than there was at the beginning. United labor and capital have created wealth, which being permanently located, must, as long as it remains productive, attract money with unering certainty.

Having suggested some of the leading principles involved in social combinations for the reflection of our readers, we desire to call the attention of the citizens of Missouri to the following act of the general assembly, believing that there is not, perhaps, one county in the State where an association might not be formed for the prosecution of some laudable enterprise, profitable alike to individuals, and to the community at large.

"An Act to authorize the formation of corporations for manufacturing, mining, mechanical, or chemical purposes."

"Section 1.—At any time hereafter, any three or more persons who may desire to form a company, for the purpose of carrying on any kind of manufacturing, mining, mechanical, or chemical business, may make, sign, and acknowledge before some officer, competent to take the acknowledgment of deeds, and file in the office of the circuit clerk of the county in which the business of the company shall be carried on, and a duplicate thereof in the office of the Secretary of

State, a certificate in writing, in which shall be stated the corporate name of the said company, and the object for which the company shall be formed; the amount of the capital stock of the said company, which shall not be more than five hundred thousand dollars, nor less than five thousand dollars; the term of its existence, not to exceed fifty years; the number of shares of which the said stock shall consist; the number of directors, and their names, who shall manage the concerns of said company for the first year, and the names of the town and county in which the operations of the said company are to be carried on."

"Sec. 2.—When the certificate shall have been filed as aforesaid, then the aforesaid clerk shall issue a license to the persons who shall have signed and acknowledged the same, on the reception of which, they and their successors shall be a body politic and corporate, in fact and in name, by the name stated in such certificate, and by that name have succession, and shall be capable of suing and of being sued, in any court of law or equity, in this State; and they and their successors may have a common seal; and may make and alter the same at pleasure; and they shall by their corporate name, be capable in law of purchasing, holding and conveying any real and personal estate whatever, which may be necessary to enable the said company to carry on their operations named in such certificate, but shall not mortgage the same, or give any lien thereon."

"Sec. 3.—The stock, property, and concerns of such company, shall be managed by not less than three, nor more than nine directors, who shall respectively be stockholders in such company, and citizens of the United States, and a majority of whome shall be citizens of this State, who shall, except the first year, be annually elected by the stockholders, at such time and place as may be directed by the by-laws of the company; and public notice of the time and place of holding such elections, shall be published not less than ten days previous thereto, in the newspaper printed nearest to the place where the operations of the said company shall be carried on; and the election shall be made by such of the stockholders as shall attend for that purpose, either in person or by proxy. All elections shall be by ballot, and each stockholder shall be entitled to as many votes as he owns shares of stock in the said company; and the persons receiving the greatest number of votes shall be directors; and when any vacancy shall happen among the directors by death, resignation, or otherwise, it shall be filled for the remainder of the year, in such manner as may be provided for by the by-laws of the said company."

"Sec. 4—In case it shall happen at any time that an election of directors shall not be made on the day designated by the by-laws of said company, when it ought to have been made, the company, for that reason, shall not be dissolved, but it shall be lawful, on any other day, to hold an election for directors, in such manner as shall be provided for by the said by-laws; and all acts of directors shall be valid and binding as against such company, until their suocessors shall be elected."

"Sec. 5.—There shall be a president of the company, who shall be designated from the number of the directors; and also such subordinate officers as the company, by its by-laws, may designate; who may

be elected or appointed, and required to give such security for the faithful performance of the duties of their offices, as the company by its by-laws may require."

"Sec. 6.—It shall be lawful for the directors to call in and demand from the stockholders respectively, all such sums of money by them subscribed, at such times, and in such payments or installments, as the directors shall deem proper, under the penalty of forfeiting the shares of stock subscribed for, and all previous payments made thereon if payment shall not be made by the stockholders within sixty days after the personal demand, or notice requiring such payment, shall have been published for six successive weeks in the newspaper nearest to the place where the business of the company shall be carried on, as aforesaid."

"Sec. 7.—The directors of such company shall have power to make such prudential by-laws as they shall deem proper, for the management and disposition of the stocks, and business affairs of such company, not inconsistant with the laws of this State, and prescribing the duties of officers, artificers, and servants that may be employed; for the appointment of all officers, and for carrying on all kinds of business within the objects and purposes of such company."

"Sec. 8—The stock of such comyany shall be deemed personal estate, and shall be transferable in such manner as shall be prescribed by the by-laws of the company; but no shares shall be transferable until all previous calls thereon shall have been fully paid in, or shall have been declared forfeited for the non-payment of calls thereon. And it shall not be lawful for such company to use any of their funds in the purchase of any stock in any other corporation."

"Sec. 9.—The copy of any certificate, or license of incorporation, or journal of proceeding of such company, filed in pursuance of this act, certified by the circuit clerk or his deputy, to be a true copy, and of the whole of such certificate, or license, or journal, shall be received in all courts and places, as presumptive legal evidence of the facts therein stated."

"Sec. 10.—All the stockholders of every company incorporated under this act, shall be severally individually liable to the creditors of the company in which they are stockholders to an amount equal to the amount of stock held by them respectfully, for all debts and contracts made by such company, until the whole amount of capital stock fixed and limited by such company, shall have been made and recorded, as prescribed in the following section; and the capital stock so fixed and limited, shall all be paid in, one-half thereof within one year, and the other half thereof within two years from the incorporation of said company, or such corporation shall be dissolved."

"Sec. 11.—The president and a majority of the directors, within thirty days after the payment of the last instalment of the capital stock so fixed and limited by the company, shall make a certificate stating the amount of the capital so fixed and paid in; which certificate shall be signed and sworn to by the president, and a majority of the directors; and they shall, within the said thirty days, record the same in the office of the circuit clerk of the county wherein the business of the company is carried on."

"Sec. 12.—Every such company shall annually, within twenty days from the first day of January, make a report, which shall be published in some newspaper published in the town, city or village, or if there be no newspaper published in said town, city, or village, then in some newspaper published nearest the place where the business of said company is carried on, which shall state the amount of capital, and of the proportion actually paid in, and the amount of its existing debts; which report shall be signed by the president and a majority of the directors, and shall be verified by the oath of the president or secretary of said company, and filed in the office of the circuit clerk of the county where the business of the said company shall be carried on; and if any of said companies shall fail so to do, all the directors of the company shall be jointly and severally liable for all the debts of the company then existing, and for all that shall be contracted before such report shall be made."

"Sec. 13.—If the directors of any such company shall declare and pay any dividend, when the company is insolvent, or any dividend, the payment of which would render it insolvent, or which would diminish the amount of its capital stock, they shall be jointly and severally liable for all the debts of the company then existing, and for all that shall be thereafter contracted, while they shall respectively continue in office; *provided*, that if any of the directors shall object to the declaring of such dividend, or to the payment of the same, and shall, at any time before the time fixed for the payment thereof, file a certificate of their objections in writing, with the clerk of the company, and with the circuit clerk of the county, they shall be exempt from the said liabilities."

"Sec. 14.—Nothing but money shall be considered as payment of any part of the capital stock, and no loan of money shall be made by any such company to any stockholder therein; and if any such loan shall be made to a stockholder, the officer who shall make it, or who shall assent thereto, shall be jointly and severally liable to the extent of such loan, and interest, for all the debts of the company contracted before the repayment of the sum so loaned."

"Sec. 15.—If any certificate, or report made, or public notice given by the officers of any such company, in pursuance of the provisions of this act, shall be false in any material representation, all of [the] officers who shall have signed the same, knowing it to be false, shall be jointly and severally liable for all the debts of the company contracted while they are stockholders, or officers thereof."

"Sec. 16.—No person holding any stock in such company as executor, administrator, guardian, or trustee, and no person holding such stock as collateral security, shall be personally subject to any liability as stockholder of such company; but the person pledging such stock shall be considered as holding the same, and shall be liable as stockholder accordingly; and the estates and funds in the hands of such executors, administrators, guardians, or trustees, shall be liable in like manner, and to the same extent, as the testator or intestate, or the ward or person interested in such trust fund would have been, if he had been living, and competent to act and hold the same stock in his own name."

"Sec. 17.—Every such executor, administrator, guardian or trustee, shall represent the share of stock in his hands at all meetings of the company, and may vote accordingly as a stockholder; and every person who shall pledge his stock as aforesaid, may, nevertheless, represent the same at all such meetings, and may vote accordingly as a stockholder."

"Sec. 18.—The stockholders of any company organized under the provisions of this act, shall be jointly and severally individually liable for all debts that may be due and owing by the company, to the amount of profits which have accrued, or dividends which have been declared and paid upon their stock respectively, and no further."

"Sec. 19.—It shall be the duty of the directors of every company organized under the provisions of this act, to cause to be kept a regular journal of their proceedings, in which shall be recorded all the proceedings and orders made by the directors, and also a book, in which shall be recorded the exact amount of profits which has been made, and losses which have been sustained by the company, and all dividends which have been declared and paid, with the amount of such dividends, and the dates when declared, and the persons to whom paid; a copy of which journal, and all books required by this act to be kept, shall be filed annually with the circuit clerk of the county in which such company is located, where they shall be kept [open] upon for the inspection of all persons interested."

"Sec. 20.—Any corporation heretofore formed or company, either by special act or under the general law, and now existing, for any manufacturing, mining, mechanical, or chemical purposes, or any company which may be formed under this act, may increase or diminish its capital stock, by complying with the provisions of this act, in any amount which may be deemed sufficient and proper, for the purposes of the corporations; and may also extend its business to any other manufacturing, mining, mechanical, or chemical business, subject to the provisions and liabilities of this act. But before any corporation shall be entitled to diminish the amount of its capital stock, if the amount of its debts and liabilities shall exceed the amount of capital to which it is proposed to be reduced, such amount of debts and liabilities shall be satisfied, and reduced so as not to exceed such diminished amount of capital; and any existing company heretofore formed under the general law, or any special act, may come under, and avail itself of the privileges and provisions of this act, by complying with the following provisions; and thereupon such company, its officers and stockholders, shall be subject to all the restrictions, duties, and liabilities of this act."

"Sec. 21.—Whenever any company shall desire to call a meeting of the stockholders, for the purpose of availing itself of the privileges and provisions of this act, or for increasing or diminishing the amount of its capital stock, or for extending or changing its business, it shall be the duty of the directors to publish a notice, signed by at least a majority of them, in a newspaper in the county, if any shall be published therein, at least three successive weeks, and to deposit a written or printed copy thereof in the post-office, addressed to each stockholder at his usual place of residence, at least three weeks pre-

vious to the day fixed upon for holding such meeting, specifying the object of the meeting, the time and place, when, and where such meeting shall be held, and the amount to which it shall be extended, or changed; and a vote of at least two-thirds of all the shares of stock shall be necessary to an increase or diminution of the amount of its capital stock, or the extention or change of its business, as aforesaid, or to enable a company to avail itself of the provisions of this act."

"SEC. 22.—If at any time and place, specified in the notice provided for in the preceding section of this act, stockholders shall appear in person, or by proxy, in number representing not less than two-thirds of all the shares of stock of the corporation, they shall organize by choosing one of the directors chairman of the meeting, and also a suitable person for secretary, and proceed to a vote of those present, in person or by proxy; and if on canvassing the votes, it shall appear that a sufficient number of votes has been given in favor of increasing or diminishing the amount of capital, or of extending or changing its business, as aforesaid, or for availing itself of the privileges and provisions of this act, a certificate of the proceedings, showing a compliance with the provisions of this act, the amount of capital actually paid in, the business to which it is extended, or changed, the whole amount of debt and liabilities of the company, and the amount of which the capital stock shall be increased or diminished, shall be made out, signed, and verified by the affidavit of the chairman, and be countersigned by the secretary; and such certificate shall be acknowledged by the chairman, and filed, as required by the first section of this act; and when so filed, the capital stock of such corporation shall be increased or diminished to the amount specified in such certificate, and the business extended or changed as aforesaid, and the company shall be entitled to the privileges and provisions, and be subject to the liabilities of this act, as the case may be."

"SEC. 23.—If the indebtedness of any such company shall at any time exceed the amount of its capital stock, the directors of such company assenting thereto, shall be personally and individually liable for such excess, to the creditors of such company."

"SEC. 24.—No stockholder shall be personally liable for the payment of any debt contracted by any company formed under this act, which is not to be paid within one year from the time the debt is contracted, nor unless a suit for the collection of such debt shall be brought against such company within one year after the debt shall become due; and no suit shall be brought against any stockholder who shall cease to be a stockholder in any such company, for any debt so contracted, unless the same shall be commenced with two years from the time he shall cease to be a stockholder in such company, nor until an execution shall have been returned unsatisfied, in whole or in part."

"SEC. 25.—It shall be the duty of the directors of every such corporations or company to cause a book to be kept by the treasurer or clerk thereof, containing the names of all persons, alphabetically arranged, who are, or shall have been within six years, stockholders of such company, and showing their places of residence, the number of shares

of stock held by them respectively, and the time when they respectively became the owners of such shares, and the amount of stock actually paid in; which book shall, during the usual business hours of the day, on every (day) except Sunday, and the fourth of July, be open for the inspection of stockholders and creditors of the company, and their personal representatives, at the office or principle place of business of such company, in the county where its business operations shall be located; and any and every such stockholder, creditor, or representative, shall have a right to make extracts from such books; and no transfer of stock shall be valid for any purpose whatever, except to render the person to whom it shall be transferred liable for the debts of the company, according to the provisions of this act, until it shall have been entered therein, as required by this section, by an entry showing to and from whom transferred; such book shall be presumptive evidence of the facts therein stated, in favor of the plaintiff in any suit, or proceedings against such company, or against any one or more stockholders. Every officer or agent of any such company, who shall neglect to make any proper entry in such book, or shall refuse or neglect to exhibit the same, or allow the same to be inspected, and extracts to be taken therefrom, as provided by this section, shall be deemed guilty of a misdemeanor, and the company shall forfeit and pay to the party injured, a penalty of fifty dollars for every such neglect or refusal, and all the damages resulting therefrom. And every company that shall neglect to keep such book open for inspection as aforesaid, shall forfeit to the people the sum of fifty dollars for every day it shall so neglect; to be sued for and recovered in the name of the people, by the district attorney of the county in which the business of such corporation shall be located, and when so recovered, the amount shall be paid into the treasury of said county, for the use of the common schools."

"This act shall take effect immediately."

"Approved March 12, 1849."

Although we are of the opinion that the provisions of this law will embrace a large portion of the cases where corporate privileges may be desired, yet there are some of its provisions which we esteem objectionable. Among these is that which prohibits the incorporation of companies with a capital less than five thousand dollars.

The wisdom that dictated this policy is beyond our comprehension: and why it is, that forty-nine men who are able to raise but $4,900 should be denied a privilege which is granted to three who can raise $5,000, is a problem in political economy which we believe none but a Missouri legislator can solve. This, however, and such other objections as may exist, will doubtless be removed by the next Legislature, provided the people should become awakened to the utility and importance of the system which we have endeavored to illustrate.

ART. II.—HISTORY OF THE AMERICAN FUR TRADE.

BY J. LOUGHBOROUGH, ESQ., OF MISSOURI.

CHAPTER III.—*Continued from Page* 324.

Government of the Bay Company—Their Survey—Commandants, Clerks and Voyageurs—The number of their Forts—Vancouver—Report of Mr. Pelly—Present state of the Trade and its Profits—Where Furs are sent—Their Treatment of the Indians—Rules of Preserving Animals—Character of the Voyageurs—Their Dress and Habits—Their Hardships and Toils—Their Food—Account of Ross Cox—His Extraordinary Adventures when lost, with Snakes, Bears and Wolves—Difficult navigation of the Columbia—Starvation and Cannibalism of some Voyaguers:

THE concerns of the Hudson Bay Company are managed by a *Governor*, a *Deputy Governor* and a *Committee of Directors*, established in London, by whom all general regulations and orders are devised and sent forth, and by whom all the accounts, reports of subordinates, and other matters of interest are examined and controlled. The conduct of this body, is enveloped in the most profound secrecy. Even the communications which they are required to make to the government, in writing, are made with studied brevity and caution, and contain only, what is absolutely required. This policy, which originates in apprehension of rivalry, and in dread of the consequences to themselves of a full exposure of their interior regulation and conduct to their employers and the Indian tribes; has resulted in the entire suppression of a multitude of facts important to science at large, and especially so, to our geographical knowledge. It is more than probable too, that we are thus kept in ignorance of a vast body of materials, which, if available, would throw a vivid light upon Indian history, and thus contribute essentially to the success of those learned and laborious efforts which are yet making, to solve the mystery of their origin, and peculiarities. In America there is a *Resident Governor*, whose duty consists in occasionly visiting the subordinate trading posts, superintending and directing the conduct of the Commandants, and collecting and transmitting an accurate account of their proceedings to the Board in London. Each interior Fort or trading post has a commandant and a clerk, as many traders as is necessary to carry the goods into the Indian villages, and bring in the furs, and as many voyageurs or hands, as are required to transport the goods to the various points at which their trade is carried on. The strictest discipline and regularity and the most rigid economy marks all their proceedings, and as the civil and criminal affairs and tribunals are composed of their own servants, the company may be said to exercise all the functions of government, saving to the crown, only due homage and a nominal control.

The posts of the company are dotted all over Northern America, from the Atlantic to the Pacific. The most northern is situated on Makenzie's river, within the arctic circle, and is called *Fort Good Hope.* In all their territories there are probably one hundred of these posts. They are, with the exception of Fort Churchill, uniformly stockades

with little wooden bastions at the corners, and capable of holding a travelling party of thirty or forty persons. But their unrivalled intercourse with the Indians has given them so complete a control over them that for purposes of trade in safety, they never need and rarely have more than four or five tenants. The largest of these posts before the late treaty with the United States, was Fort Vancouver, on the Columbia river, about ninety miles from its mouth, and accessible to vessels of fourteen feet draught. It consists of a stockade enclosing four acres of ground, a village of sixty houses, stores, mills, workshops; a farm of three thousand acres, and a considerable quantity of cattle. This, together with all other posts. south of the 49th parallell, has been conveyed by the treaty to the United States, at a price to be fixed by commissioners appointed by the high contracting parties.

The fur trade is naturally a decreasing trade. In a letter from Mr. Pelly, the Governor, to Lord Glenelg, previous to the grant of the charter of 1838, he states that nearly their whole profits were drawn from their own proper territories; their other trade exhibiting in some instances, a trifling loss, and in others a trifling gain. This difference between their own proper territories and that obtained from the north-west company has been occasioned by the fact that the Bay Company have uniformly, except in Oregon, enforced regulations for the preservation of the game, whilst all of their rivals destroyed it with reckless prodigality.

To give the reader some idea of what is probably at this time, the amount of business done by this company we will add some statements of facts. In 1844 they exported from the whole of their possessions 433,398 skins, valued at about the sum of eight hundred thousand dollars. In the year 1845 their exportations of skins were probably of a value a little exceeding that of the previous year. In these same years the value of the goods, introduced into the country was about two hundred thousand dollars. The whole number of persons in their employment in 1845 was 1212. If we rate the salaries and wages of these persons at one hundred and fifty thousand dollars, the profits of the company will be four hundred and fifty thousand dollars. From this sum it will be required to deduct the cost of transportation in ships, from America to Europe, and the east, and the reremaining balance will show their net profits. The commercial reader may suggest that we have made no allowance for building forts, and for the transportation of goods into the interior and furs to the harbors. We answer that the forts are all built by these men working for the allowed wages, and that they also, transport the goods from the St. Lawrence, or York Factory to the interior, in canoes, and on pack animals; and the furs to the St. Lawrence, or York Factory, at the points of shipment. The goods, for the convenience of the trade, are put into packages of ninety pounds, in London, two of which can be carried by a mule, and which a single person can easily handle in making portages around falls and other impediments to interior navigation. The furs also, are always packed in bales of the same weight. The foregoing statistics are derived from the official reports of the company to Parliament, and we may therefore, well doubt whether they have rated their profits as largely as the truth would require. Mr.

Greenhow, in his work prepared for the use of the Senate, during our Oregon negotiations, estimates their exports, in 1838, at $1,000,000 and the goods introduced by them at $200,000.

The furs collected by the company are nearly all shipped for London, either at Montreal, at York Factory on Hudson Bay, or at Fort Vancouver, on the Columbia, from whence they are distributed through Europe and into the east. Direct shipments from Vancouver to Canton, are sometimes made, but the general course of trade is as we have stated. There was formerly some understanding with the East India Company, by which those sent to China were exchanged for teas and silks for the European market. What arrangements the company at this time have for the disposal of their furs, after they reach London, we are unable to say.

Since the Hudson's Bay Company have enjoyed the exclusive privileges of trading with the Indian tribes, in all the British Dominions on the continent, they have certainly proved themselves wise snd prudent administrators. They have established schools for the instruction of the natives and half-breed children at their posts, and they have given every facility and encouragement to missionaries to enter the Indian territory, and given them assistance and protection whilst engaged in pious efforts for their conversion. It is true that in consequence of the absence of competition they have the power (and use it no doubt) of compelling the natives to pay them higher prices than they would otherwise have to pay, and these greatly enhance their profits, but it may well be doubted whether this burthen upon the Indians is not better for them than the demoralization, the crime, the strifes, and bloodshed, which would inevitably result from again opening this trade to competition, just as these things did occur during the long period preceeding their unrivalled dominion. The company have entirely succeeded in acquiring a controlling influence over the various tribes within their territories; and justice requires us to state that in the main, this influence has been exercised beneficially to the Indians. They have repressed their vindictive wars, given them adequate motives to exert themselves for a support, substituted their implements and many of the comforts of civilization for the rude inventions of barbarism; and in many other ways essentially ameliorated their condition. Some of its hunters and trappers, when far beyond their control, have occasionally perpetrated acts worthy of fiends; but we never had a doubt that these atrocities were disapproved by their superiors, and severely punished when discovered. "In all the countries," says Mr. Wyeth, "where the Bay Company have exclusive control, they are at peace with the Indians, and the Indians are at peace among themselves." The testimony of Capt. Wilkes also, is decisive upon this point.*

The territory under the control of the Bay Company comprises with some portions of good soil, an immense tract of desolate country totally unfit for cultivation and for the habitation of civilized man. It is sprinkled all over with groups and chains of lakes, united by streams, the heads of which so nearly approach, that slight labor would be requiste to unite them, and thus divide the continent into a number of

*Wilkes, Vol. 4, page 332.

islands. These interior streams and lakes are the channels upon which their goods and furs are transported from place to place, by the *voyageurs.* The sparsity of the soil has rendered it an object to preserve the races of fur-bearing animals as the most productive revenue the company are likely to derive from the country. For this purpose they have divided it into a number of districts, (or *beats* as they are technically called.) The commandants of posts are charged with the duty of taking care that no animals are killed out of season—that the females are well preserved, and that the Indians confine themselves to hunting the proper animals at the proper period. The Indians themselves, are restrained by penalties and by the regulation which precludes them from trade when these laws are violated. We cannot take leave of the subject of the British fur trade without taking some notice of the peculiarities of the voyageurs, and of the toils, hardships and adventures in which they have been for ages engaged. They are a very unique and strongly marked race of beings. Decended from the old *Coureur des Bois*, they have retained the characteristics derived to them from the intimate associations of their fathers with the Indian tribes, and the wild and fierce life which they lead; but under the controlling influence of the company, they have gradually lost all the ferocious and sanguinary traits which once disgraced them. Their dress is semi-barbarous. They usually wear a surcoat made of a Mackinaw blanket of blue, red or green color, a striped cotton or calico shirt, stuff trousers, and sometimes leather leggings, mockasins of Deer skin, or of the dressed hide of the Buffalo, shod with raw hide, and a belt of bright color, from which they suspend a knife, a tobacco pouch, and other implements. Their language is a piebald lingo, the ground of which is a French patois embroidered with Indian, Scotch and English phrases.

The whole lives of these voyageurs are consumed in wild and extensive rovings, sometimes far into the artic circle, where food and raiment are alike difficult to acquire, then over the great mountain chain of the north-east, and down as far as the Pacific coast, and again along the course of winding streams, inlets, bays and lakes, exposed to every inclemency of the most inhospitable climate in the world. A few days of association with civilized communities uniformly disgusts and wearies them. They cannot rest when fettered by the institutions and habits of civilization. The only truly happy moments they experience is when upon long and toilsome expeditions, up rivers around portages and across lakes; encamping at night, in the open air, chatting around their evening fires. Then the evening meal of meats (if they have it) is roasted upon the coals, the pipe is passed around, the story of hazardous adventure is told and the joyous song is borne upon the bosom of the still and quiet lake. Then it is that all the hereditary gaity of the French race is exhibited. They are most skilful canoe-men, vigorous and adroit with the paddle, and they will move on from one day's end to another, only relieving their labors with their songs and their jests. Murmuring or quarreling is rarely heard among them. The language employed in this intercourse is uniformly kind and affectionate, and although they have their full share of the intense egotism and consequent selfishness of the French character, it is

softened and disguised by the politeness and apparent cordiality of their demeanor. Nothing can be more romantic or more pleasing than to repose on the banks of one of those quiet lakes when the skies are clear, the air balmy, and the waters moving in glittering ripples; and listen to the sweet chaunts which have been preserved by tradition, and which are sung by these voyageurs, as they steadily ply the oar to their cadence. This class, and the class of keel-boatmen, formerly found upon the Ohio and Mississippi rivers, are the two strongest marked classes which have been developed upon our continent since its discovery. The latter are now only remembered in the anecdotes of some of our older citizens, and the former too will be extinguished with the trade to which they owe their origin.

The voyageurs, in their journies, subsist themselves upon whatever they can find in the country through which they are passing, rarely taking a sufficiency of food to last them through. So far as food is concerned, their lives are necessarily hard, for there is but a small portion of the British territory frequented by buffalo. Deer are becoming rarer every day, and the other animals of northern America would be deemed by any one else almost unfit for food. The seal, the walrus, the reindeer, the musk ox, and all the furred animals are eaten by them. Some of these and others, for example, are extremely offensive to the taste and smell; but these men early learn to eat them not only contentedly, but with avidity. West of the mountains, all of the interior posts are subsisted upon horses, dogs, and fish. Of these, the dog is preferred. Wild horses are said to be not so good as those which have been domesticated and worked. Their flesh is tough and stringy; that of a fat domestic one is tender, and wholesome. We read that dogs were deemed by the Romans and some other ancient nations, a dish fit to grace a prince's table; but we moderns have discovered so many other things to tickle the palate, that the fact of their being now eaten under any circumstances, is remarked as extraordinary. Such is the force of custom. These men abide by the Roman rule, and are only discontented when the means of doing so fail them. Fruits and vegetables are found in some localities, but they are extremely rare.*

As illustrations of the privations and dangers frequently encountered by the employees of the Bay Company, we will superadd a couple

* Of these, in addition to the lichens already noticed, we will note a few more. The *Cornus Alba*, the lead colored berries of which are called bear berries by the Crees, because these animals are fond of them; the *Viburnum edule*, or winter berries; the *Azalia Medecaulis*, used as medicine; the *Lillium Philadelphium*; the *Epilobium Augustifolium*, used by the voyageurs as a pot herb under the name of the *L'he ba fret*; the *Ledum Latif lium*, called by the Indians *Kawkee Kee Puequaw*, ("always leaves," or evergreen,) and also *Maskaig* (medicine) used as tea by the whites; the *Ledum Palustis*, also used as tea, the *Prunus Virginia*, choke cherry, beaten or pounded into pemmican; the *Pyrus ovalis*, the wood of which is used for arrows and pipe stems, and is hence called *bois de fleche* by the voyageurs: its berries, the size of a pea, are the finest fruit in the country. The Crees call them *Mississcootoommeena*. Juniper common and *Juniperus prostrata*, the berries of which the Indians call crow-berries, and some species of the *Saxafraga*. The researches of Brown, Richardson, Hooper, Douglass, and others have eventuated in the collection of upwards of 660 species, belonging to 27 genera of plants within the bounds of British America, east of the Rocky mountains. The above comprise such as are used as food. In northern Oregon there are some others.

of examples, one of them showing how the commandants, clerks, and gentlemen are exposed, and the other evidencing the dangers and sufferings endured by the voyageurs.

Mr. Ross Cox went out to the mouth of the Columbia river, on board the Beaver, which was the second vessel sent by Mr. Astor to the Pacific in furtherance of his magnificent project for establishing a line of trading posts across the continent. After the loss of Mr. Astor's first vessel, the Tonquin, and the unauthorized sale of his establishment and furs to the North-West Company by his faithless partners, Cox succeeded in obtaining employment as a clerk with the latter. In this capacity he served at several of the interior posts in Oregon until the spring of the year 1817, when he obtained his discharge and crossed the continent by ascending with a party of 80 individuals, the northern branch of the Columbia in canoes, descending the Peace river to the Athabasca lake, and thence through a long line of lakes and streams, not found on our maps, to Lakes Winnipeg and Superior. The navigation of these streams, with the falls and portages, will be recurred to hereafter in the course of this work.

On the 29th June, 1812, he took his departure with a large party from Fort George, to ascend the Columbia river and perform duty at the post on the Oakinagan river. After passing the junction of the Lewis and the Clark forks, the party ascended some distance up the Lewis fork, and from thence left their canoes and commenced their journey northward overland. On the second day, they passed the boundaries of the soil and arrived upon an immense plain destitute of trees, and showing no signs of life, save a few bunches of parched and stunted grass. This plain was variegated with some undulations, a few scattered masses of detached rocks, and some deep ravines without a drop of water within a circuit of a hundred miles, and literally swarming with rattlesnakes. Two days and a half were occupied in toiling over this sterile valley when the party arrived at an oasis of small dimensions, where a sparkling fountain bubbled up and diffused the waters of life immediately around it, with its little basin enclosed in an umbrageous covering of overhanging trees, and its margin clothed in rich grass. Here the party halted for rest and refreshment. After making a hearty meal, the men reclined upon the velvet grass, smoked their pipes, and chatted over old adventures and new hopes. Cox himself concluded to stroll a little way down the streams to some clumps of trees which he discovered at some distance from the camp with the expectation of gathering some fresh fruit as a regale after his solid meal of horse meat. Fruit he found in abundance, and after satiating his appetite, he carelessly laid down to rest, and meditated upon his future prospects. Unfortunately the morning's fatigue had been so great that sleep overcame him. Four hours afterwards, he awoke. Imagine his consternation, on returning to camp, at finding that the whole party had departed, man and horse, and the extinct fire testified several hours previously. Almost maddened with fear, he screamed out at the top of his voice, and ran hither and thither in wild and aimless excitement. After exhausting himself in these vain efforts for relief, he found calmness enough to estimate all the dreadful reality of his situation. He was alone in a wild and desolate re-

gion, infested by venomous serpents and desperate beasts of prey, without a horse or gun and destitute of clothing and implements. In the north-east corner of the valley, after an arduous search, he found the marks of horse's feet, which he followed until they were lost in a chain of rocky hills where they could make no impression. From this elevation he could see for many miles ahead; but discovered no sign of the party. His only clothing was a gingham shirt, a pair of nankeen trowsers, and thin mockasins. The night now closed in with a cold, heavy dew. Finding a patch of dead grass, he pulled enough to lie down upon and cover himself, and in this situation commended himself to the care of Almighty God. He arose in the morning, cold and stiff, and proceeded onward with no assurance that he was in the right direction, but animated with vague and undefined hopes. After travelling all day, he discovered, late in the evening, two horsemen galloping along a height some miles in advance; but all his signals failed to attract their attention, and in a few moments he was again left to his desolate reflections. When it became nearly dark, he turned around to collect the means of preparing for sleep, and to his horror discovered a very large rattlesnake coiling himself for a stroke. He sprang back, picked up a large stone, and with it succeeded in crushing the reptile's head. His mockasins were now worn out, and the soles of his feet bruised and swollen by the travel over the rocky surface.

The next morning he pursued his hopeless journey. The rocky sandy soil covered with jagged shrubs and burnt grass, made his toil and suffering excessive. This day too, closed in without awakening any well founded hopes of relief. The third morning he pursued his course through a region diversified with hills and vallies, and clumps of pine trees, and filled with rattlesnakes, horned-lizards, and grass-hoppers. The grass-hoppers kept him in constant alarm by the similarity of the buzzing of their wings, to the alarm of the rattlesnakes. In the evening he arrived at the shores of a lake, some miles in length surrounded with trees and shrubs, where he obtained an abundance of choke cherries, the first food he had procured since his party left him. Near the bank of this Lake he slept, but he was frequently aroused during the night by the melancholy and hideous howling of large bands of wolves, and the fearful growling of a number of grizly bears.

The next morning he determined to make several short journies in different directions, during some days, with the hope of finding traces of Indians or traders. The cherries were in abundance here, and if he left them he had no security for the future. This day he killed several rattlesnakes, and only escaped the fangs of a hungry wolf by acting with great firmness and decision. The second day after he determined to pursue his journey onwards. In the evening he was fortunate enough to find some cherries and haws. Through the night he was again disturbed by the fierce encounter of bears and famished wolves. The next day he was several times surrounded by large bands of wolves, barking, howling, and knashing their teeth with hunger. He was too weak for defence if they had known it, but he saved himself by making demonstrations at them with a stick, and thus driving them away. He was now compelled to cut pieces from the legs of

his trousers to bandage his feet, and in a few days had well nigh stripped his legs naked

On the 25th he was attacked by a wolf of immense size, but again escaped by his firmness and his assumption of superiority, and whilst engaged with the wolf was horridly alarmed by two lynxes, which passed very near him but fortunately without stopping. Two whole days had now been spent without food or a drop of water. Late in the evening his hopes were raised by coming upon a bunch of green trees and shrubs, but he was confounded at finding no sign of water. Pulling a few rushes for a bed, he laid them at the foot of a large stone for a pillow, but at the moment he was about lying down, he caught sight of a rattlesnake just under the stone, coiled and ready to strike. He killed him with his stick. On further examination he found a large cluster of them under the stone, the whole of which he rooted out and killed. Ere he well accomplished this task, a dozen or two snakes of different kinds, of dark brown, blue, and green colors, made their appearance, some of which he succeeded in killing. Near this spot he found a resting place for the night.

The next morning he pursued his laborious way over arid plains, covered with prickly pears and sharp rocks, which lacerated his feet terribly. In the afternoon he found water rushing through a deep and narrow fissure in a bank of rocks and foaming at its base. Here he cooled his burning brow, and slaked his intense thirst. After reposing for a few minutes, he threw himself into the stream and bathed. In the undergrowth here he also found some hips and cherries upon which he made a delicious meal after his three days fast. Searching for a place to sleep, he discovered the hollow trunk of a large pine, which the winds had prostrated years before. Into this he clambered and laid himself down. In about two hours he was awakened by the fierce growling of a bear, which had removed a portion of the bark with which he had covered himself, and was leaning over him with his nose hesitating what he should do next. He instantly sprang up, seized his stick and uttered a piercing cry, which caused the bear to recede a few steps, when he turned about apparently in doubt what he would do. Discovering that the bear was likely to bring his resolution to the fighting point, Cox determined to retreat, and accordingly scrambled up a tree near by. The bear commenced ascending the tree also. Cox succeeded in anchoring himself upon a limb from which he was enabled to annoy the bear by striking his muzzle and feet with a stick. After scraping the bark for some time the bear gave up the adventure and retired to the hollow tree a few feet off, where he quietly took up his quarters. Cox made several attempts to descend but the bear slept with one eye open and gave evident signs of the fact, and he was compelled to keep his station in the tree until morning. A little after sunrise, the bear issued forth, shook himself, and examined the state of the game. He finally concluded his chances of success to be hopeless, and departed evidently in high dudgeon. Cox descended the tree, and pursued his journey through an open pine wood, and late in the evening to his great joy came to a spot where a party had evidently encamped the preceeding night. Here he made a meal upon the scattered fragments of the bones of ducks and geese, upon which his pre-

decessors had regale l themselves. From this spot he journeyed on for several days, over a country similar to that already mentioned, endeavoring to follow the tracks of the party which preceeded him. At length he rose suddenly upon the high bank of a small deep stream, and stood at gaze. He fancied he heard the neighing of a horse. Soon he scanned the surrounding country, and with deep thanks to Almighty God for his deliverance discovered a band of horses a mile or two off. Clambering over the stream and up its opposite bank he hastened forward, and in a short time discerned the curling line of smoke arising from a ravine. On approaching this, he found two Indian women, who instantly fled in dismay, for they thought he was some evil spirit. Soon after two men made their appearance and greeted him in the most friendly manner. They took him to their wigwam of bushes and skins, and washed, clothed, and fed him with much solicitude. He ate heartly of salmon, and of course suffered severely with the pains of indigestion some hours afterwards.

He had wandered in this destitute situation for fourteen days. The Indians took him to the camp of the party to which he was attached, where he ascertained the causes of his fearful adventure. The party being large they had started off from the spring in several divisions. Those who were in front thought he was in the rear, and those in the rear thought he was in front, and the fact was not known until they encamped for the night and missed him. Several parties had been out in search of him but their efforts were futile.

In April 1817, a party of eighty-six men started from Fort George, near the mouth of the Columbia, to make a voyage across the continent, to Fort William, near the head of Lake Superior. This party were in the service of the North-west Company. It consisted of five Scotchmen, two Englishmen, one Irishman, thirty six Canadians, twenty Iroquois, two Nippissings, one Cree, and three half-breeds, nine Sandwich Islanders, one boy, a servant, two women and two children. After passing the rapids with two portages, they arrived at the *dalles* (or narrows) where the Columbia river is confined between two immense walls of rock, for some miles, and rushes with amazing swiftness. Passing by a portage they proceeded on to the little *dalles* some miles above, and passed around them by the narrow channel to the right. The same night they arrived at the foot of the great falls. Passing these they proceeded on, and on the next day passed several other bad rapids. In a day or two more they reached the grand rapids. From there they met with no impediment until after they passed Lewis's fork of the Columbia, when they arrived at the Priest's rapid. Here a large portion of the party left them for the interior posts. The same day the party made Pasquin's rapid, and on the next day reached Rocky Island rapid. Two days more brought them to *La rapide de Ignace*, where the river begins to become narrowed between masses of rock and is consequently from this upward, very swift. The ensuing day they arrived at the Grand rapid. The next day brought them to the Little falls, where the channel is confined in a narrow fissure of rock, for upwards of a mile, and is impassable. It is to be remarked that the tributaries of the Columbia, as it is ascended, become much more rapid—and thus renders navigation, even with canoes, extremely

laborious. On the 17th of April, the party paddled into the first lake formed by the Columbia, which is about twelve leagues in length. This is connected by a narrow and short strait to another lake of much smaller dimensions. After passing this lake the river becomes still more narrow and difficult of ascend. Some days more brought them to the second dalles, which cannot be passed with canoes. Two days afterwards they arrived at the upper dalles which are also impassible and filled with whirlpools. In a few days they arrived at the Rocky Mountain portage, and this is the highest point the indefatigable voyageurs have been able to reach in light canoes. We have thought it a matter of interest to show, in one view, the numbers of the rapids &c., in the Columbia river, as well as to add that in times of low water the river above Walla Walla is nearly impassible, even for light canoes; and at the period of the annual rise, the tributary streams which are precipitated into it from great elevations, create a current which even steamboats could not ascend; because some visionaries have frequently indulged themselves and tickled the public ear with dreams of a change of the channel of the whole commerce of China and the East Indies, from the great ocean across this broad continent upon these streams. And to put a final quietus upon such speculations in future, we will remark that all the streams descending from the west side of the mountains to the Pacific are characterized by more and greater impediments than we have here enumerated.

At Rocky mountain portage several of the men were so much indisposed that the leaders of the party deemed it imprudent to take them across the mountains. They were therefore sent back in the best canoe to Spokan house. The party sent back consisted of seven men, two of whom only were able to work; but as their course was down stream and the water high it was believed they would arrive in three days at the Kettle falls from whence they might easily reach Spokan house. They were therefore, only supplied with three days provision. This party were all totally lost with the exception of one man, and the following is the account which he gave of their calamities.

On leaving the Rocky Mountains they shot rapidly down the river until they reached the Upper Dalles. Here they were compelled to disembark. A tow line was attached to the stern of the canoe, and two men attended it along the banks with poles to keep it off the rocks. In the middle of the Dalles the canoe was involved in a whirlpool, and the line was broken. For some moments the canoe was lost in the vortex. When it again emerged to the view, it was forced against the side wall of rocks and crushed to pieces. They had not taken from it either their blankets or provisions, and now found themselves utterly destitute, at a season when no fruits were to be hoped for. It was impossible to return to the mountains. Their only hope was to proceed down and follow the course of the river lest they should become bewildered. The flooded stage of the stream had submerged all the bottoms and they were compelled to toil their way through almost impervious forests and brush, and over jagged and pointed rocks and deep ravines. In many places the ground was literally covered with prickly pear and other thorny shrubs which soon tore off the covering of their feet and legs, and lacerated them at every step. Food, they

had none, and no means of obtaining it, and this added to their previous debility, rendered it impossible for them to proceed with any speed. On the third day a man named MACON died. The survivors divided his remains in equal portions between them and thus subsisted themselves for a few days longer. Their feet were now so much bruised, cut and swollen that they could not make over two or three miles per day. Another man, HOLMES, now died and his body was also divided between them, and life was thus sustained. In a few days more all the rest of them died except two, La Pierre and Dubois.

Finally La Pierre alone was found on the upper Lake of the Columbia by some Indians who were fishing in a canoe. They conducted him to Spokan House where upon his recovery he gave the foregoing account. He added that after the death of the fifth man, Dubois and himself continued for some days at the spot where he died. When they again started they loaded themselves with as much of his flesh as they could carry: that they succeeded in reaching the upper Lake, around which they wandered for some time looking for the Indians: that in this period their supply of human flesh was exhausted, and they were again threatened with starvation; that on the second night after their last meal, the conduct of Dubois became suspicious, and he La Pierre remained upon his guard; that soon after they laid down for the night he feigned sleep, and observed Dubois stealthily opening his clasp-knife, with which he sprang upon him, and wounded him in his hand. A silent and final conflict followed. La Pierre succeeded in wresting the knife from his opponent, and feeling otherwise unsafe, he determined to cut the throat of Dubois, and did so. A few days afterwards he was found by the Indians. This story of La Pierre was brought into doubt by the statements of some of the natives, who had found the bodies of two others of the men near that of Dubois, both of which showed signs of having been murdered. He was therefore sent to Canada for trial, but was finally acquitted for want of evidence. Whether the details as given by him are true or false, the reader can at least rely upon one fact: that whether the men came to their death as here stated, or not; their sufferings and their ends were both terrible beyond computation.

The chronicles of the Bay Company abound in numerous incidents of a similar character, tending to show how laborious, how dangerous, and how dreadful the lives and sufferings of these individuals ore; and yet, no class of persons in the world are more deeply attached to their way of life, or less frequently change it for one which promises to be fairer.

ART—II.—IOWA—ITS RESOURCES.

There is no portion of American history which contrasts so strongly with the history of other countries, as that which relates to the early settlement of the new states of the Union. In other parts of the earth, ignorance, and ferocity, its natural ally, combining in their

opposition to the genius of civilization obstructed its progress; and many ages of sanguinary strife passed away before the selfish principles of man could be modified, and subjected to the control of his moral nature.

Instead of uniting to subdue the earth, for the purpose of extracting thence the means of subsistence, and of comfort, he turned his powers against his own species, and warred with his fellow man, not only for the exclusive possession of the bounty of nature, but, with the fell design of subjugating his brother and compelling him to yield up the fruits of his labor. But here in America, and more especially in that region west of the Mississippi, we have seen the savage tribes retiring before the tide of civilization, not driven out by force, but relinquishing their claim for a stipulated price; and ere their foot prints were obliterated from the soil, we have seen their country in the occupation of a different race, bringing with them the science of government, the christian religion, and the useful and the ornamental arts. A territorial government is organized: and in a few years lines are drawn on the map, and established as the boundaries of a sovereign State. Such is the history of IOWA, a name unheard of as denoting a civil division of the earth anterior to the year 1838; but now, a state embracing an area of 50,914 square miles; and containing a population of near 200,000 inhabitants.

The history of Iowa anterior to the advent of civilization is a sealed book: the tribes that roamed over its flower-clad prairies, and kindled their camp fires by its beautiful streams are gone, and no record remains to declare their deeds; and except their names, and treaties of cession, the historian will find but few facts to record in respect to their existence. Among these, however, there is one fact that deserves to be translated into the language of every nation: *no blood, shed in war between the civilized and savage races, ever stained the soil of Iowa.* Where else upon the green earth has civilization ever been established without mortal strife? Let the historian treasure up this fact to adorn the brightest page of his annals.

In contemplating the probable destiny that may await a community, the first subject that challenges attention is the genius of its institutions; for no matter how rich the soil, how genial the climate, nor how favorably located in respect to commercial advantages, the wealth and happiness of its constituents, must in time, conform to the degree of their intelligence, and moral designs.

Without pretending to decide upon the merits of the constitution and laws of Iowa, we may, however, affirm that whatever may be their defects, if the principles, contained in her constitution in respect to education shall be cherished, and faithfully carried out, they will, in time, not only correct any vices which that instrument may contain, but give the best direction to all subsequent legislation. The following is the constitutional provision to which we refer:

"2. The General Assembly shall encourage, by all suitable means, the promotion of intellectual, scientific, moral and agricultural improvement. The proceeds of all lands that have been or hereafter may be granted by the United States to this State for the support of schools, which shall hereafter be sold or disposed of, and the five hun-

dred thousand acres of land granted to the new states under an act of Congress distributing the proceeds of the public lands among the several states of the Union, approved A. D. 1841, and all estates of deceased persons, who may have died without leaving a will or heir; and also such per cent. as may be granted by Congress on the sale of lands in this State, shall be and remain a perpetual fund, the interest of which, together with all the rents of the unsold lands, and such other means as the General Assembly may provide, shall be inviolably appropriated to the support of common schools throughout the State.

"3. The General Assembly shall provide for a system of common schools, by which a school shall be kept up and supported in each school district at least three months in every year; and any school district neglecting to keep up and support such a school, may be deprived of its proportion of the interest of the public fund during such neglect.

"4. The money which shall be paid by persons as an equivalent for exemption from military duty, and the clear proceeds of all fines collected in the several counties for any breach of the penal laws, shall be exclusively applied in the several counties in which such money is paid or fine collected, among the several school districts of said counties, in the proportion of the number of inhabitants in such districts, to the support of common schools, or the establishment of libraries, as the General Assembly may from time to time provide by law."

It will doubtless require much time to put in successful operation, and perfect a system of public education in a country so recently settled, and thinly inhabited as Iowa; but we learn from the report of the superintendent of public instruction, made to the general assembly in December 1848, that much has already been done towards the organization of public schools. And judging from the zeal evinced by the superintendent, and the excellent practical views and suggestions contained in his report, we conclude that, under the direction of one so well qualified, it cannot be long before the people of Iowa will realize the most satisfactory results from the liberal donations granted by congress for the promotion of education. In his report to the legislature the superintendent, Thomas H. Benton, Jr., says, "Our school fund is of the most liberal character. It will probably amount to $2,000,000 when the school lands are all disposed of." The income from this sum will doubtless be sufficient to secure to every child in the State a sufficient amount of instruction to enable them to read and write at least, and if appropriated with a view of effecting this object, Iowa may yet be the first State, or government upon the earth to boast that, there is no adult citizen born upon her soil who cannot read the Holy scriptures, and the laws of the land. Despairing in the hope that our own State of Missouri will obtain this glorious distinction, we should rejoice to see it won by the youngest of the States west of the Mississippi. What a noble end to stimulate the people of Iowa to exertion! and what a brilliant reward awaits the superintendent who may be instrumental in its consummation!

The natural wealth and resources of Iowa are but little understood, and have not, as we believe, been sufficiently appreciated by the people of other States. Under this head the soil is entitled to the first consideration. We have been long conversant with the settlement of new countries, and know how often men are deceived in respect to the quality of soils in new districts; but after having compared the geological reports made by scientific individuals, with the observations and experience of the practical agriculturist, we conclude that the soil of Iowa, if not the best, is but little inferior to that of any State of the Union. In a communication from a distinguished citizen of Iowa, he says, "You are aware that the course of the Des Moines river is from north west to south east, passing through the centre of the State, and take it all in all, perhaps, there is not a better body of land in the world than that which is irrigated by this stream and its branches, even to its uttermost source in Minesota. I have never heard of an acre which would not be considered good, even in New York or Pennsylvania. The United States geologists speak of it in the highest terms, for beauty, agricultural capacity, and mineral resources. They have found coal for 200 miles, and heavy deposits of Iron and lead ore are also believed to exist. They found gypsum in abundance, forming cliffs for miles. Limestone suitable for lime, and a superior quality of hydraulic limestone, rocks suitable for polishing, for grind-stones whet-stones, and for building purposes. Brick-clay in abundance, and some of superior quality. Water power is also abundant, and timber plenty throughout the whole region."

Bradford in his "Notes on the North-west," says, that he resided in Iowa six years; that the product of an acre ranges from fifty to eighty bushels of Indian corn, from thirty to forty bushels of wheat, and from seventy to eighty of oats. All the roots grow with great luxuriance. onions attaining from five to six inches in circumference; radishes, and the long roots, to double the size in the east. Potatoes and other garden vegetables are of superior qualities and abundant in yield." Again, he says: "It is better, even for grazing than for tillage. The grasses, in several varieties, grow with astonishing luxuriance."

In his report on the geology of the mineral district, D. D. Owen, says of the soil, "I believe it to be peculiarly adapted to the growth of the sugar beet, which flourishes best in a loose fertile mould, and which has of late, become, in some European countries, an important article of commerce." * * * * *

In concluding this brief notice of the soils of this district, which I regret that time does not permit me to extend, I may add, that I know of no country in the world, with similar mineral resources, which can lay claim to a soil as fertile and as well adapted to the essential purposes of agriculture." There is, however, in our opinion, one important objection to a considerable portion of Iowa, the lack of timber.

Besides the inconvenience arising from the scarcity of timber for buildings, farming purposes, and fuel, the winds, owing to the absence of forests, sweep over the prairie districts with such force as to drive the snow from the surface of the wheat fields; and the plant, being thus exposed, is more liable to be killed by the frost than in timbered districts of the same latitude. This objection, however, may

be partially removed in time by the growth of timber, which may be expected to take place after the native grass of the prairies shall have been destroyed.

In connexion with this subject, we extract the following observations from the report of Ebenezer Philips, Esq., sub-agent of D. D. Owen, in making a geological survey of the mineral district:

"The timber in the whole mineral district, on both sides of the Mississippi, grows in those situations which are least exposed to fire, and to the blasts of wind which sweep over the extensive prairies. That currents of air have a great effect in stunting the growth of trees, seems proven by the fact that trees in similar soils, when sheltered by the hills, are much higher than those which are in exposed situations. The annual fires which have undoubtedly been kept up by the aborigines for ages past, have also, no doubt, contributed to keep open our vast western prairies; for those parts of the western country which were originally prairie, snd where the fires have been kept out for twenty years or more, are now covered with thick groves of small trees; such places are numerous in the south-eastern part of Illinois.

The American aspen, in the whole district of mineral lands, seems to be the pioneer tree which first invades the prairies. In many places we see the copses of this tree in the broad prairie, like little islands in a vast lake. And almost everywhere in the prairies we see little shoots of it of one year's growth, which would soon be trees were it not for the annual fires. When once the prairie sward has been broken by this kind of tree, others come in one after another; the prairie soon changes to the thicket; and, in a few years, it becomes the vast wilderness, "the boundless contiguity of shade."

The soil in the prairies throughout the district of mineral lands, where it is level enough to be cultivated, has an unusually black appearance, indicating a large proportion of decomposed vegetable matter.

This black mould is often four or five feet deep. In the timbered land the soil is not so black, nor, from appearance, so productive; but, so far as I have been able to ascertain, its productiveness seems to be equal to that of the blacker soil of the neighboring prairie.

The sub-soil of the district presents every variety of sand, clay, marl, &c., dependent on its geological position.

Owing to its northern latitude, it cannot be expected that Iowa and Wisconsin can produce as good Indian corn as Indiana, Ohio, and Kentucky; but it produces generally better corn than lands in the same latitude east of the lakes.

Wheat grows well when not destroyed by winter frosts; to these it is, however, more than usually exposed. Owing to the openness of the country, the snow is often blown off, leaving the unprotected wheat exposed to the wintry blast.

The crops of oats and potatoes raised in this district are equal to any in the United States. The soil and climate are also well adapted to the growth of grasses. Wild grasses grow luxuriantly, and cultivated grasses succeed admirably so far as they have been tried."

Bradford, in his notes on the North-West, says, "The principal employments here must always be those connected with agriculture;"

and we believe that the opinion generally prevails that Iowa is destined to be almost exclusively an agricultural State. That the *principal* employments will be agricultural, may be true; but the facts indicate great manufacturing capacity as well as agricultural; and assuming these facts to be true, and that the mineral resources should be found equal to what we are authorized to expect, it may be affirmed that, excepting, perhaps, the valley of the Ohio, no part of the Union combines more advantages for manufacturing than does the valley of the Des Moines.

The excellent adaptation of Iowa, and the region lying west of it, to the production of wool, hemp, and flax, we think can not be doubted; and with an abundance of coal, water-power, iron, and cheap provisions, she will furnish from her own soil the raw material for two, of the three great staples of manufacturies, iron and woolen fabrics—and even the raw material for the other, cotton, can be delivered in the valley of the Des Moines, nearly, if not quite as cheap as at any point on the Ohio above Louisville. Nor is her position in respect to distribution less favorable than her means of producing. For should the project of a railway to the Pacific be carried out, there can be no question but that a branch of this improvement will pass through Iowa; but whether this great thoroughfare be made or not, yet one, or more, of the great lines from the Atlantic will, doubtless in time, be extended west to the Missouri river; and in either event the location of Iowa will be eminently favorable in a commercial point of view. With a system of improvement formed upon a line of railway passing through the State from east to west, she would command the trade of all the country lying north, and secure a large portion of that west of Missouri. Indeed, when the improvement now in progress on the Des Moines is completed, a portion of the trade of the upper Missouri is destined to find its way to the south through this route.

In support of this opinion, we make the following extract from the report of Samuel R. Curtis, Esq., principal engineer, on the Des Moines improvement: —

"When the Des Moines improvement is completed, and paid for, the only object of tolls will be to improve and repair the work. Supposing however we adopt the same rate of tolls that are now charged on the Ohio canals, the toll and transportation from the Mississippi to the Forks of the Des Moines, would not exceed twenty cents per hundred. To encourage Through freight tolls should be *reduced* on freight going west of the upper extremity of the work, and by this reduction the transportation per hundred from the Mississippi to the Forks, will be as low as fifteen cents.

Let us then compare the probable cost of transportation from Saint Louis to Council Bluffs on the two routes,—the Missouri and the Des Moines:

Freight of 100 pounds from St. Louis to St. Joseph on the Missouri river, as quoted in the newspapers of St. Louis, -	$1 50
From St. Joseph up the Missouri to Council Bluffs say,	50
	$2 00

Freight of 100 pounds from St. Louis to Keokuk on the Mississippi river, as quoted in the newspapers in St. Louis,	12 1-2
Add freight on the Des Moines improvement from Keokuk to the Forks of the Des Moines, - - - - - -	15
Add freight by wagons over land from the Forks to Council Bluff 120 miles at the same rate now paid from Keokuk to Eddyville, - - - - - - - - - - -	80
	$1 07 1-2
Saving on the freight of 100 pounds by taking the Des Moines route, - - - - - - - - - -	-$0 92 1-2

Or, 46 1-4 per cent better than the Missouri route.

Make a similar estimate of the downward freight from Council Bluff to St. Louis, and the result will be similar and in favor of this route. There is also *time* and *insurance*, decidedly in favor of the Des Moines river route; so that taking all things into consideration the matter is mathematically certain (except in the times of high water in the Missouri,) the trade of Council Bluffs will incline to follow down this improvement. By extending this improvement up the Racoon river, as far as possible, and adopting a rail plank road, or other means to cheapen the transit across from the Forks to Council Bluffs, the difference will be more in favor of this route, and must secure the trade of that point.

But it is not this point alone that is reached. We enter the great valley of the Nebraska, and all the upper branches of the Missouri; and offer to the commerce of these valleys, the cheapest and most expeditious route for their products. A country of a thousand miles extent capable of furnishing vast and unknown agricultural and mineral products, may by wise and discreet energy, in the prosecution of this work, become tributary to the improvement now in progress on the Des Moines.

High water in the Missouri, will carry off the trade in that channel and reverse this calculation. But the Missouri is generrally low, and prices of freight, are therefore generally stated high. Take general rules, and apply the data as you please and you will arrive at this result. The Des Moines Improvement has every reason to contend for the travel and trade of the far west.

No other river can compete with the Des Moines in susceptibility of permanent improvement in this region, and in competition with this design. Neither can a railroad injure our prospects. Transportation on water, where large crafts, such as flat boats, keel boats, and steam boats, can easily float; will always be much cheaper than on railroads. The heavy products of a country, such as the agricultural and mineral, will always pursue the channels of rivers when large boats can navigate them; and such is the character of the Des Moines Improvement that flat boats, and even rafts may pass down.

This improvement will cost much less than a railroad.

Ninety-one miles of the work is contracted, and we cannot be much mistaken in the amount this will cost. I have before stated that under these contracts to Ottumwa, I estimate the cost at $477,357 37 for the whole distance ninety-one miles."

The following extract from a communication from the commissioner of the general land office, will show the nature, and extent of the means provided by Congress for the improvement of the Des Moines river: —

"By the terms of the law, the grant is, of one equal moiety, in alternate sections, of the public lands remaining unsold and not otherwise disposed of, encumbered or appropriated, in a strip five miles in width on each side of said river, to be selected within said Territory, &c., &c., and the proceeds are to be applied in the improvement of the navigation of that river, from its mouth to the Racoon Forks. Hence the State is entitled to the alternate sections within five miles of the Des Moines river, throughout the whole extent of that river, within the limits of Iowa.

In a communication from Charles Corkery, Esq., secretary of the board of public works, he says in regard to the condition and prospect of the Des Moines river improvement, "the surveys are all completed, and locations made, to the Racoon Fork, which is the terminus contemplated in law; and contracts are let from the mouth to Ottumwa, 93 miles, embracing a side cut of ten miles, in which are two locks; and thirteen additional locks connected with dams in the river. The side cut is nearly completed, and six of the dams and locks were commenced last fall, and are now in rapid progress. That part of the improvement now being worked, will afford a safe steam-boat navigation, about 60 miles. * * * The length of the river from the Mississippi to Racoon Fork is 208 miles, but there is no reason why the work should not be continued 60 miles further at no distant day, as there is no material change in the character of the stream. * * * * * * * * * *

That the work will be carried forward with energy and dispatch, there is no reason to doubt, for the means set apart for that purpose are entirely ample."

The fertility of the soil and favorable location of Iowa are admirably calculated to incite her citizens to the undertaking of great enterprises. Coming, as many of them do, from New England, they bring with them the intelligence, energy, and inventive genius, which distinguish the inhabitants of that region from all other people. It seems to be an inherent quality of the New Englander to appropriate and apply all the means placed within his power to the most useful and profitable ends; and if they should follow out this principle in the West, it will not be many years before Iowa will rank among the first of the Western States. To show that her citizens are already looking forward to the accomplishment of great objects, we copy the following facts and observations from an excellent communication received from a gentleman who is thoroughly acquainted with the people, as well as with the country.

"Our limited agricultural products find a market at present in the great flood of emigration to this country, but it is time that we should look abroad, for our surplus will be immense in a few years, and the waterpower to be afforded by this improvement will produce a variety of new articles for export.

Southern Iowa, and particularly the Des Moines Valley, is well

adapted to plank roads, and there is sufficient timber to furnish plank for that mode of improvement. A company is now organized, and stock is being taken liberally, for the construction of a plank road from Burlington to Mount Pleasant, 25 miles, and our Legislature passed an act last winter, for the construction of a similar road from Montrose to Keokuk, 12 miles. The people of northern Iowa do not consider themselves much in need of plank roads, as the character of the soil is such as to afford them very excellent natural roads at all seasons, and I do not think that the country will afford a surplus of timber over the quantity necessary for ordinary purposes.

The Iowa and Cedar rivers are susceptible of slack water improvements, the former for 50 or 60 miles, and the latter say 120. Indeed whether we view the Cedar river, with regard to the character of its banks, or the quantity of water which it discharges through the year, it is very little inferior to the Des Moines.

The Rail Road projects before the people are, first and most exciting, a Rail Road from Dubuque to Keokuk, and second, one from Dubuque to Council Bluffs on the Missouri. You are aware that Congress has granted the Chicago and Galena Rail Road Company the right of way through the public lands from Chicago to Dubuque. We believe that the same influence which brought a railroad from Boston to Chicago, will carry it forward through the great wheat growing regions of Illinois, Iowa, Nebraska, and to the south pass of the Rocky Mountain, and will not be allured to St. Louis for the accomodation of their more southern rivals on the Atlantic seaboard. Yankee enterprize and ingenuity preponderates in all our great political and commercial affairs, and without their aid your Pacific Rail Road scheme will stagnate. They have made choice of the parallel of latitude which they will continue to the south pass, and the south may be thankful for the privilege of connecting with them on this side, say at Fort Laramie. We are obstinate enough to believe that the route on the north side of Platte River is far preferable to that on the south side of that stream, notwithstanding the arguments of Mr. Loughborough in your February number. Lieut. Woodbury examined both routes last year, and I am well informed that he gives a decided preference to the north side. The Mormons sent delegations to explore both routes in 1845, and have selected the uniform dry ridge on the north, where they avoid all the dangers and vexations so common to the crossing of streams on the south side. This is confirmed too, by recent letters from California emigrants—some of whom, such as John Plumbe, having paid great attention to this subject, and all of whom agree in saying that they have gained largely in time, travel, and annoyance over those who set out from Independence and St. Josephs. On this subject I think there can be no doubt.*

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* We decline an issue with our worthy correspondent in respect to the location of the Main stem of the Pacific railway.

If a railroad should be constructed across the Rocky Mountains to the Pacific, we believe that it ought to be so located, if practicable, as to afford the greatest accommodation to every part of the country; and, the better to secure this object, it will, in our opinion, require at least three termini, or places of crossing, on the Mississippi river,—one to accommodate the North, one the Centre, and one the

Iowa is as sensible of the importance of public works as any other State, but she is too young, and her population too heterogenous, to have contemplated a system of internal improvements. Our Constitution too, guards against the creation of a state debt for any such purpose, and perhaps it is well that this should be so during our infancy. The two projects referred to, are, therefore, the only ones which look beyond local interests, and even these have not yet assumed a state character. A continuation of the Chicago and Galena—or more properly now, the Chicago and Dubuque, railroad to the Council Bluffs, is merely looked to by general consent, as necessarily consequent to the great western line projected by Boston and New York, and to those cities, more than to our own inherent power, do we look for its ultimate progress. The terminus of the Des Moines river improvement will be very near the geographical centre of the State, and our seat of government is destined to be located there in a very few years. Our railroads will then all converge to that point, whenever we enter on a system. The trade of the lead mines is of sufficient importance to attract railroad capital to Galena and Dubuque, and the head of our Des Moines river improvement will than be on a direct line to Council Bluffs, or such other good crossing place as may be selected on the Missouri, north of the mouth of Platte.

The Dubuque and Keokuk road is the one most agitated, beause it interests a large portion of the present population. It has grown out of the obstructions to navigation in the Mississippi river, and is designed to take a circuitious route through the interior of the State to the foot of the lower rapids. Its length would be about 200 miles, and the country very fertile."

The following statistics of population, public lands, &c., are derived from the same source:

"We think that the census of next year will show the number of our population at 200,000, and their location is chiefly confined to the tributaries of the Mississippi. Our best commercial towns are—Keokuk, population 2500; Fort Madison, 1500; Burlington, 4000; Bloomington, 2000; Davenport, 1000; Dubuque, 4000. In the valley of the Des Moines there is Farmington, Keosauqua, Fairfield, Ottumwa, Oskaloosa, and Fort Des Moines, with populations ranging from 500 to 1000 respectively. Iowa city, on the Iowa river, perhaps 1200, &c.

Iowa embraces an area of 50,914 miles, or 32,584,960 acres, of which 14,571,731 acres are surveyed, and 18,013,228 unsurveyed. The public lands of Iowa have now been in market since 1838, and yet the whole quantity sold, up to 1st January last, is only 2,361,022 acres. The School lands (16th section) are estimated at 901,831 acres, and 500,000 diverted from internal improvements. The quantity remaining unsold and unappropriated on 1st January last, was 28,368,436 acres. A striking feature is the small amount of swamp lands in Iowa. Missouri is reported to contain 1,517,287 acres of

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South. We care not which may be called the *main stem or trunk*. We are quite satisfied that the central line shall be denominated a branch, provided that it is made to unite with the main stem without deflecting too far from the nearest and best route.

swamp or worthless lands; Illinois, 1,833,412; Michigan, 4,807,673; Wisconsin, 1,259,269, &c., while Iowa returns but 33,813 acres of such lands, and it is mysterious to us all where even this small quantity is found.

The southern part of the State is generally settled from southern Indiana, Ohio, and western Pennsylvania; but the northern counties contain a larger proportion of Northern and Eastern settlers. This diversity of population is attributed to diversity of climate and soil. The north is cold, and excels in wheat and wool; but the atmosphere is more mild in the southern counties, and the soil is better adapted to the growth of corn and pork."

Though a majority of the population of Iowa is from New England, and from States north of the Ohio river, yet it would appear from the following statement, showing the birth-place of the State officers, including members of the legislature, &c., that some of the more southern States are pretty well represented. Of eighty-nine public officers eighteen were born in New York, fifteen in Pennsylvania, thirteen in Ohio, eight in Virginia, four in Vermont, four in Indiana, four in Kentucky, three in Connecticut, three in Maryland, two in Tennessee, two in North Carolina, two in New Hampshire, two in Missouri, one in New Jersey, one in Maine, one in Delaware, one in Illinois, two in Ireland, one in England and one in Bavaria. It may be regarded as a curious fact, in political history, that under the constitution and laws of Iowa, no individual born in the State is now eligible to office nor even entitled to vote at an election.

There has not been sufficient time, since the settlement of the country, to make a fair test of its adaptation to the cultivated fruits, and we have seen no fruit from Iowa, except grapes; but if other kinds produced there, are as perfect in their development as the grapes we saw, it must excel in the production of all such as are adapted to the climate. We are informed by Judge Corkery, to whom we are inebted for much of our information in regard to Iowa, that a gentleman near Dubuque, has a good vineyard of Italian grapes, from which he makes a large quantity of wine every year. We think that our southern readers will be somewhat surprised to learn that wine is made west of the Mississippi in latitude 42½ degrees north.

Before closing this imperfect sketch of Iowa, we desire to record our opinion in respect to its capacity as a sugar growing district. From the wonderful accounts that we have heard of the root crops of that region, we believe it will excel any other known country, in the production of the beet; and that when the experiment is fairly made, sugar making will be found far more profitable in this, than in any of the southern States. It is a branch of agriculture well suited to free labor, and we believe that in time, sugar is distined to constitute one of the leading staples of the State.

In reviewing the facts which we have been able to collect, we cannot resist the conclusion that Iowa is destined to become one of the first States in the Union, and that no part of this continent offers more, if indeed, as many inducements to the emigrant.

ART.—III.—PACIFIC RAILWAY.

The following article from the pen of J. LOUGHBOROUGH, ESQ., will be found to embrace a wider range of facts and arguments in respect to the great project of a RAILWAY FROM THE VALLEY OF THE MISSISSIPPI TO THE PACIFIC OCEAN, than perhaps any other document that has hitherto been published. The writer has, with extraordinary industry and patience explored every source of information, and we feel the fullest assurance that he has collected his facts with fidelity and stated them with fairness; and under this conviction we respectfully recommend this article to the careful perusal and impartial consideration of the people of the United States.

M. TARVER,
J. M. FIELD,
L. V. BOGY,
GEO. K. BUDD,
N. R. CORMANY,
Committee of publication appointed by the general commitee of St. Louis, on the Pacific Railway.

From the earliest period of authentic history the commerce of the east has been deemed an object of the first importance to civilized nations. In the east, religion and civilization had their birth, and those nations—and those only—which have largely partaken of the profits of oriental commerce, have successively been elevated to power and pre-eminence. The Assyrians, the Persians, the Tyrians, the Egyptians, the Romans, the Greeks, the Byzantines, the Venetians, the Portugese, the Dutch and the English, have all respectively in the course of ages enjoyed a supremacy in eastern trade, and hence, the national power and glory of these nations were chiefly derived; and its loss has been uniformly followed by disaster and degradation. The dangers and difficulties encountered by the ancients in their struggles to monopolize the treasures of Asia very far exceeded those now hazarded in the pursuit of commerce. They were destitute of accurate geographical knowledge—they had no conception of the mechanical principles, and improvements which have given to our times an almost absolute sovereignty over the elements,—and they suffered in consequence of a deficiency of all those means and appliances which have well nigh converted the various pursuits of life from labor into pleasure. Yet with all these difficulties a commerce with eastern Asia, from the western provinces, and from Europe was steadily pursued as the leading object of enterprise, with an ardor and perseverance which could have been justified only by the value and magnitude of the end at which they aimed. Sacred and profane history abound with details of the toils, the dangers, the difficulties, the wars, and the intrigues to which this trade gave birth; and

indeed, the very routes over which the adventurer's successively passed in their efforts to acquire the control of it indicate alike the importance which theyattached to its possession, and the lengths to which they were willing to go to secure to themselves the monopoly of so rich a prize. First, the wandering, but hardy Arab with his patient camel is depictured in the page of history, traversing thousands of miles of trackless and burning desert, exposed to the daily hazard of famine and the poisonous breath of the Simoom, to bring into the markets of the west the jewels and precious stones, which rival princes struggle to possess,—next, the frail and imperfect barque of the coaster of Hindoostan, with its light sails and oars appears upon the bosom of the Indian Ocean, where capricious winds, whirling currents, and rocky reefs continually threatened it with destruction, and then entering the sacred Euphrates, deposits its precious burthen at the city of Thapsacus, whence, the Arab transports it over hundreds of miles of desolation to the swarming shores of the Mediterranean,—next, the Indian Mariner, grown more hardy and skilful by time and practice, may be contemplated sailing calmly and confidently by the debouchure of the Euphrates, and along the rock-bound coast of Arabia until rounding its southern point in the teeth of those Monsoons which yet excite the terror of the children of the sea, he safely distributes his rich cargo among the eager crowd who have collected from Egypt and the Levant to traffic with him at the head of the Red Sea; next, the seat of Empire is transferred to the Nile, and the India Merchant lands his goods at Berienice, about two hundred and fifty miles south of Suez, whence the millionaire of Alexandria transports them with camel caravans to Coptos and to Alexandria, where they find their way into all civilized nations,—next, we behold the growing influence of the trade of the east in the Grand Canal which united the waters of the mysterious Nile to those of the Red Sea,—next, we behold the beginning of that great emigration of the northern nations which from age to age has successively extinguished the sovereignty, and in some instances the civilization, of the south; and the Turks fix the seat of their power upon the Bosphorus, whence daring and adventurous semi-robber bands prosecuted a trade with Asia by crossing the Black Sea, ascending the river Phasis, descending the river Cyrus, encountering the storms and currents of the Caspian, and finally ascending the Oscus to its head, and traversing the base of the great chain of the Himalaya's through ferocious and hostile bands to the western provinces of China.

Wherever the fertilizing current of Eastern commerce flowed, in ancient times, civilization, power, and splendor followed in its wake. Petræ, Baalbec, Palmyra, Tyre, Alexandria, and Byzantium were all created by the riches of the East. Every stone of their magnificent temples—every material improvement which secured to the masses of their people the comforts and luxuries of life—every triumph of their genius in poetry, and the fine and useful arts, and every exhibition of their military vigor and strength, may be distinctly traced to the one all-pervading source. Time has bedimmed the brilliant pages of their glorious history, and darkened the oriental splendor of their traditions; but the fragments of their gorgeous palaces and shattered columns yet

speak to us in a language more solemn than that of history, attesting the value of Eastern commerce and the fatal consequences of its loss.

Fired by the progress of more ancient nations, the Venitians, who were among the first to awaken from the long sleep of the middle ages, concentrated all their energies upon the successful attempt to wrest from the Ottoman the sceptre of eastern commerce. Building up a naval power which commanded the Mediterranean, they asserted a supreme dominion over eastern trade, and Brussels, Antwerp and other northern cities derived, by their permission, benefits from it, which may yet be recognized in their public edifices. At length the passage of the Cape of Good Hope, by Vasco de Gama, again revolutionized the commerce of the civilized world, and Portugal ascended to political and military supremacy. Next, the vigor and perseverance of the Dutch, the French, the Danes, and the English, gave each of these nations a position in power corresponding to the extent o their possessions and influence in the east; and a series of the most ruthless and bloody wars which have polluted the history of the human race was waged for ages, by these nations, for the sole purpose of monoplizing the trade of the Indies. And, finally, the maratime skill and superior energy of the English character having triumphed over the combined powers of all European rivals, an empire has been attached to the British crown containing hundreds of thousands of square miles and an industrious, submissive, and patient population of one hundred and fifty millions of people.

Nor did the anxiety of the nations of Europe to reap the rich rewards of Asiatic intercourse stop with the military and naval rivalries which followed the discovery of the passage around the southern extremity of Africa. Those of them who found themselves too weak to cope with their rivals upon this channel of intercourse devoted themselves to the task of finding new routes to the treasures of Asia. All the northern coast of Europe from the western border of Norway to the northern point of Kamschatka was explored by adventurers fitted out successively by the Dutch, the English and the Russians; and the latter power traced out an overland route through Siberia and Mantchoo Tartary, over which caravans to this day travel with safety, regularity, and great profit.

Inspired by the hope of immortality, Christopher Columbus turned his eyes from the bloody scenes which disfigured the regions of the rising, to the dim, mysterious, brilliant and dreamy splendors which his imagination depictured as encircling the setting sun, and over that broad and tempestuous ocean which is interposed between the old and the new world, without chart or guide this heroic spirit ploughed his way in the full confidence that he would penetrate the Indies in a briefer space of time than those who rounded the tempestuous point of Africa. He died in the conviction that he had accomplished the object of his ambition, and in ignorance that he had brought to the knowledge of the civilized world a new and magnificent continent. This grand discovery opened up new and extensive fields for the gratification of the spirit of adventure and the reward of chivalric ambition; but the mines of Mexico and Peru, the wealth and splendor acquired by the conquerors, and the boundless expanse of

rich, diversified, and fascinating landscape were all insufficient to divert the attention of Europe from the grand idea which led the great discoverer westward,—*a new and shorter route to the Indies.* Every expedition fitted out by the authorities of Spain, Portugal, France and Italy for discovery, conquest and colonization, had as its ultimate purpose the solution of this all-important problem. The coasts of the two continents were surveyed with the utmost care and diligence from Terra del fuego, to the 50th parallell of north latitude in search of some inlet which might lead through the great continent into the Pacific,—all the great rivers were ascended, and all the great lakes encircled—Cortez examined the long isthmus which unites the two continents for more than twelve hundred miles,—and the military adventurers who sought plunder as well as empire in the interior were all awakened to the immortal fame which he should acquire who made the great discovery for which all Europe absolutely longed. Nor were the English slow in perceiving the vast importance of obtaining the command of such a route should it be found to exist. This constituted the leading inducement to the voyage of Sebastian Cabot, and from that period to the present, that powerful nation has not ceased to take a deep and abiding interest in the subject. She has equipped more than thirty expeditions for the exploration of the coasts and harbors of northern America, and whilst we are writing this article the whole civilized world is filled with anxiety and solicitude relative to the safety of the heroic and devoted Captain Franklin who with an ardor and energy worthy of all admiration has consecrated his talents, his time, and his life to the solution of the only geographical problem which can ever again excite the efforts of science and enterprise.

After the hope of finding a nearer route to the Indies for commerce by sea voyages was abandoned, the ambitious spirits who led bands of European adventurers into the interior of the North American Continent for purposes of conquest and plunder, devoted themselves to the interesting task of tracing out a connection between the eastern and western oceans through interior lakes and streams. Ferdinand de Soto who united in himself the character of the chivalric hero, the daring brigand, and the ruthless and bloody bigot; after traversing thousands of square miles between the bay of Spiritu Santo and the Ozark chain of mountains as early as the year 1540 without finding the rich mines which he had been deluded to anticipate boldly turned his steps westward from the outlet of Red river, and toiled onward through deep morasses, turbid bayou's, and putrid lakes infested with loathsome and venemous reptiles; until issuing into the boundless and sterile plains which expand in stern and solitary grandeur from the hundredth degree of longitude to the base of the Rocky mountains, he was appalled by the dread sublimity of the scene and retraced his weary way.

Jacquez Cartier, Father Marquette, and the Sieur de la Salle, were all animated by the high ambition of finding a natural navigable passage through the continent by interior lakes and streams. The first of these daring adventures in three successive voyages, ascended the St. Lawrence as high as the point where the city of Montreal now stands; the second sustained by a pious spirit and unswerving faith

descended the Mississippi in 1673 as low as the mouth of the Arkansas in expectation of finding a connection of the latter stream with the Californian Gulf; and the third whose fame is consecrated by the muse of history as the founder of colonization in the Mississippi Valley, after parting with his friends near Montreal in 1689 to whom his last words were "*La Chine*," descended the Father of waters to the spot where his turbid current is mingled with the Mexican Gulf. In a subsequent voyage he landed at Matagorda bay, and from thence attempted to toil his way by land to Canada, but was cruelly murdered by his companions in the plains of the Arkansas. La Salle died in the conviction that a connection would be found between the Illinois a tributary of the Arkansas, and the waters of the Pacific.

In the year 1766 *Capt. Jonathan Carver* then in the British service traversed the regions in the vicinity of the great Lakes of Canada, and penetrated as far westward as the St. Francis, where the children of the wilderness told him of the river Oregon; in 1769, *Mr. Hearne*, starting from Fort William on Hudson's bay had his feet torn to pieces, and sprinkled his blood over the frozen and jagged plains of the arctic circle, until he reached the Northern ocean, in the vicinity of the Coppermine river in latitude 70 degrees; and in 1789 *Sir Alexander MacKenzie* leaving the Athabasca lake passed through Slave lake, and down the stream to which he gave his name to the Arctic sea, whence he returned, and turning his face westward, and surmounting the stupendous chain of the Rocky mountains, pursued his hazardous way on foot through strange and ferocious tribes, and amid scenery which is unrivalled in grandeur and sublimity to the shores of the Pacific upon the 52 parallell of latitude.

Finally, the expedition of *Lewis* and *Clarke* fitted out by that man of genius and common sense, of profound abstract thought, and practical ability *Thomas Jefferson* forever determined that there was no *natural navigable passage from the Atlantic into the Pacific Ocean.*

Baffled thus in every effort to change the route to the Indies by the discovery of new avenues of intercommunication, the ambition of statesmen and the avarice of traders, were directed for a long period to securing the free use of the route around the Cape of Good Hope, and a permanent footing at various points in the Indian Seas. To effect these purposes the genius and skill of statesmen, and the power of military and naval armaments have been respectively brought into requisition, and the final result has been that the naval strength of Great Britian has given her a preponderating influence in the east.

The idea of uniting the two great oceans, by a canal across the Isthmus which connects the northern with the southern part of the American continent, for the purpose of opening a new channel for the commerce of Asia, was never entirely lost sight of from the period when Cortez caused it to be examined. Projects for this purpose, ending in signal failure, were set on foot by M. Martine de la Bastide, and subsequently by William Patterson a native of Scotland. No less than four routes for canal or railway have been proposed at various times.

1. By the Isthmus of Panama.
2. By the Lake of Nicaragua.
3. By the River Atrato.
4. By the Isthmus of Tehuantepec.

1. *Panama.* This portion of the isthmus lies between 8 and 10° of north latitude, in the Province of New Grenada, and varies in width from twenty eight to forty eight miles. It was first surveyed by order of Bolivar, and, subsequently under a secret order of the French government; and lastly, the United States having acquired by treaty the right of way, a company has been chartered by the state of New York for the construction of a railroad from the city of Panama to the head of navigation on Chagres river, and thence to Navy Bay in the Gulf of Mexico. The stock we understand has already been taken in the city and state of New York. The results of the survey show that the road can be certainly constructed on a line not exceeding forty six miles in length, with a grade no where exceeding fifty feet per mile. The company are now making energetic efforts to prosecute the work and there is no reason to doubt of its completion within the next two years. Ocean steamers have already been built in anticipation of the completion of this project, and lines are now in successful operation from our eastern ports to Chagres, and from Panama to California and Oregon. If as is believed steam power can be profitably introduced upon this new route, to China the construction of this railway must seriously affect if not entirely change the channel of the commerce of the east.

2. *Nicaragua.* This lake is situated between 11° and 12° of north latitude, at an elevation of one hundred and thirty four feet above the Pacific ocean and is connected with the Gulf of Mexico by the river San Juan.

The entire route was surveyed by Mr. Bailey in 1837 and 1838 under the authority of the government of Nicaragua. He estimated the cost of a canal with one mile of tunnel and two miles of deep cutting through volcanic rock and a number of locks at $30,000,000. Were reasonable tolls collected on commodities transported over a work of such great cost it could not compete successfully with the Panama railway, more especially as the tunnel will involve the necessity of trans-shipments.

3. *Tehuantepec.* The width of the isthmus here is one hundred and thirty five miles. The route proposed for a canal or railway ascends the Guasececualco river which flows into the Mexican Gulf as high as the town of Tarissa, and thence over a plain through a depression of the Cordilleras to the Chicapo which flows into a lake in the vicinity of the Pacific. This route was surveyed by Moro in 1832 under the orders of Don Jose Garay; but as this survey has proven to be very erroneous, no reliable induction can be made from it. A Mexican professing to have the exclusive right of way across this isthmus memoralized the congress of the United States at its last session for aid towards opening a canal on this line. And the English commercial house of Manning and McIntosh have also claimed the right of way and at our latest accounts were proceeding to the practical assertion of it.

4. *Atrato.* This route follows the river Atrato, which empties into the Gulf south-east of the isthmus of Darien, to its source, and thence through a gap of the Cordilleras to the source of the San Juan, along the line of the ancient Peruvian canal, and down that stream to the Pacific. It is, however, too far south to come in competition with either of the three routes already mentioned.

The isthmus of Tehuantepec is about five hundred and twenty miles north-west of Panama, and therefore, this route would be at least one thousand miles nearer to Canton than that by Chagres, and Panama for vessels sailing from New York to the isthmus, and from the isthmus to Canton. It is therefore obvious, that if a canal or railway can be constructed at Tehuantepec which will afford equal facilities with the railway at Panama, that the latter route cannot compete with the former. And if this work shall be completed under English authority, her merchants can afford to undersell us in our own ports, and will therefore become our carriers in the trade of the east. Did the declaration of Mr. Monroe, reiterated by the late president Polk, respecting European colonization upon the North American continent mean nothing?

During the progress of these schemes for crossing the isthmus, new plans for changing the commerce of the Indies have been broached by distinguished individuals in the United States. The first in order of time was that of senator Benton, published in 1818. The proposition was, to substitute steam navigation upon the Missouri and Columbia rivers, for the sea voyage and connecting those streams by natural or turnpike road. With the information which we now have in respect to this route,it is scarcely necessary to remark that it does not merit the slighest consideration. we will, however, mention some of the physical obstructions, which in our opinion render it impracticable. In low water the Columbia river descends over a long succession of rapids and falls, to the Pacific.—one of these the kettle falls, is one hundred and sixty feet, and the great falls, from their head to the foot of the Dalles, (9 miles,) has a descent of 70 feet. Lewis and Clarke found 42 rapids and falls in their descent of the river; and moreover Clarke's river—the one proposed for steam navigation, is absolutely filled at its mouth by the fall of an overhanging precipice. But if there was not a solitary rapid, or other obstruction, the navigation of the river would be impossible, because it descends at the rate of more than three and a half feet per mile, and we are advised that no steam-boat can be constructed which will stem such a current.

And, when it is known that owing to ice, and low water, the navigation of the upper Missouri is totally worthless for all commercial purposes, except during the summer tide, it is evident that this route would not meet the demands of our Pacific trade, even if the navigation of the Columbia was as good as that of the lower Mississippi. Our present condition as a nation, and the age in which we live, demand other and more efficient facilities of travel and transportation than this, or, either of the routes before mentioned can afford; for, since the invention and introduction of the railway and the steam-car, and the rapid progress of population and trade towards the Pacific,—since the colonization of Oregon and the conquest of California—since the

discovery of the rich mines of the precious metals along the spurs of the Sierra Nervada—and since the vast impulse which all these causes have given to emigration to the shores of the Pacific, and to the great and growing commerce of that mighty ocean; the minds of statesmen and philanthropists,—of projectors and of enterprising commercial men, have been directed to the vital importance of facilitating our intercourse with our Pacific colonies,—of providing the means of conducting our rapidly increasing trade—of enlarging the boundaries of civilization—and of creating that last grand revolution in the commercial intercourse of the world, which through all future time is to preserve it under a settled, permanent and beneficial system. It is perfectly obvious that the only possible means of accomplishing these magnificent objects is the railway; and to the solution of the question respecting the practicability of such a work, and the advantages of its construction, a number of intelligent and laborious minds have been directed for years past. None of the plans for crossing the continent hitherto proposed, promise to produce a *radical* and *permanent* change of the route of commerce to the east; because, none of these improvements will enable the people of Europe or America to conduct this commerce as cheaply, and safely, as it may be conducted by sea voyages. Fortunately for us, and for the world, the discovery of the railway and steam-car has placed in our hands the means of doing that for which the nations have vainly struggled for the past three centuries; and for which they have expended more in time, capital, and men, than would have sufficed for the construction of a work of thrice the magnitude and cost of a Pacific railway.

Several plans for the construction of a railway across the continent have been laid before the public within the last ten years. These plans differ essentially, as respects the route upon which the railway shall be carried, the manner in which it shall be constructed, the sources from which the means are to be drawn to pay for it, and the authority under which it shall be built and controlled in future time. The principal of these schemes are the following:

1. From Tampico to Mazatlan.
2. From Vera Cruz to Acapulco.
3. From Natchez to Mazatlan.
4. From Galveston to San Diego.
5. From Memphis to San Diego, Monterey, or San Francisco.
6. From Lake Michigan to Puget's Sound or Francisco.
7. From St. Louis to San Francisco and Oregon.

1. *Tampico to Mazatlan.* The practicable distance between these points would be about seven hundred miles. If there was a prospect of a settled government and a prosperous condition of agriculture, manufactures, and commerce in Mexico, it is probable that an improvement of this character and magnitude might be undertaken; but the known habits of the Spanish race, and of the cross races which have been brought into existence by their intercommunication with various native tribes, precludes the probability, not to say possibility, of the accomplishment of such an enterprise.

2. *Vera Cruz to Acapulco.* This plan is much more feasible in many respects than the former, because, if the time should come

when even simple security can be given to capital invested in Mexico, the interest of European commercial men might induce them to furnish the means for the construction of a road between these points intersecting in its course such a number of important interior regions. The route, as it has been frequently proposed and commented upon, would pass through Jalapa, Cordova, Puebla, Cuarnavaca, and the city of Mexico. The distance, as now traversed by mules, is five hundred and twenty-two miles. Two great mountain chains cross this route; the ridge of Rio Frio, between Vera Cruz and the city of Mexico; and the ridge of El Marques, between that city and Acapulco; and both these granite ridges are upwards of ten thousand feet high.

3. *Natchez to Mazatlan.* This route has been most elaborately advocated by Professor Forshey in De Bow's Review. The whole distance, as calculated by him, would be 1491 miles; and the cost is estimated at $22,000,000. The estimated cost is evidently far too low. Moreover, taking his own account of the route as correct (which is more than doubtful) the difficulty of construction would be far more than upon any route yet projected. We have mentioned these routes through foreign territory more as matter of historical curiosity than from any other motive, for it is perfectly certain that no project can command the approbation of the people of this country, which proposes to build up the prosperity of a foreign State, or to place the interests of the United States in any degree under its control.

4. *Galveston to San Diego.* A memorial in favor of this route was presented, we believe, at the last session of Congress, under the resolutions of a mass meeting of the citizens of Texas. The line of the railway would pass from Galveston Bay north-west to the thirty-second degree of latitude, thence westward across the Rio Grande and through the Passo del Norte, or over the Sierra Madre, to the sources of the Gila, thence down the valley of that river to its mouth, and thence over the Cordilleras to San Diego. The distance would certainly exceed fourteen hundred miles. We apprehend that a railroad so far south, if constructed at all, must be constructed by some other authority than that of the general Government. Too small a portion of the Union would be directly interested in it.

5. *Memphis to San Diego, Monterey, or San Francisco.* The first suggestion of the city of Memphis as the eastern terminus of a railway to the Pacific, was made by Lieut. Maury, of the National Observatory, in a letter to the Hon. T. Butler King, under the date of January, 1848. Since that period a large number of public meetings have been held in the Southern States to express popular sentiment in favor of this suggestion, and a convention of delegates from all these States is to be held at Memphis, in October next, for the purpose of giving the public opinion of the South the respectability and force of deliberate, organized action. It seems to us that it would have been well if our friends of the Southern section of the Union had examined with more care the letter of Lieut. Maury before they undertook to invoke the influence of his high character in favor of any *specific* route for a railway to the Pacific. He has not asserted, or even undertaken to say, that he believed that a railroad could be constructed from Memphis to Monterey. He has only said that if the earth were an uninterrupted

plain, the *geographical* line of commerce would indicate this route as the preferable one. He qualifies his opinion by adding, "I wish you to understand that I do not pretend to know any thing as to the nature of the ground, or the obstacles in the way, further than what may be gathered from a mere geographical knowledge. San Diego or San Francisco may either offer a better terminus for the railroad than Memphis." As the sole desire of those who favor Memphis is that, it shall become the eastern terminus of the railway, the original proposition has been recently varied so as to include any and every scheme which proposes a railway either to San Diego, Monterey, or San Francisco.

The line proposed by Lieut. Maury is an *air* line; because of his want of topographical information. Practically of course this line would have to be varied to suit the structure of the country through which the road would pass. Let us follow the proposed line, and examine the face of the country through which this route passes, and see whether it be practicable to construct a railway from Memphis to either of the three ports of California.

The proposed line would cross the St. Francis, the Languille, the Cache, the White and the Arkansas rivers, with numerous tributaries, through a region of swamps and river bottoms which annually overflow. An able article in *DeBow's Review*, for July, written expressly to aid in the advancement of the Memphis scheme, in speaking of this portion of the route excuses it thus, "The danger of overflow in eastern Arkansas can without doubt be obviated entirely by proper levees, constructed in the north-eastern part of that State." "Our facts are too meagre, however, to venture any precise calculation of obstructions and expense." "There are also good lands upon the greater portion of the way, and to us *it is perfectly clear from all the facts we can gather*, that the passage from Memph's to Santa Fe presents, to say the least, no greater obstacles than that from St. Louis to the South Pass or some other pass in the mountains." How can this be clear to one who a few sentences before confesses his ignorance of the "obstructions" from Memphis through Arkansas? and how can it be clear to one who has glanced at Fremont or any one of the twenty works of travellers to the South Pass, and there seen that the wide world affords not a better route for a railway?

Moreover it is incorrect to say that "our facts are too meagre" respecting the route from Memphis to the mouth of the Canadian.—The country has been surveyed by Long and Featherstonehaugh, and described by Nuttall, Hunter and Dunbar, and numbers of others. It has also been surveyed under the authority of the General Land Office, and is as well known *scientifically* and *popularly*, as any other portion of the Mississippi Valley. If these authorities had been consulted by the reviewer, he would have escaped the necessity of complaining of a meagreness of fact. He would then have found that a great portion of this region is alluvial, and affords no stable basis for a railway; and that to secure it from annual overflow, it would be necessary to incur the expense of throwing up levees along the banks of the Mississippi, the Arkansas, and their tributaries. Is this a work of economy? And he would then have been convinced that much of the line of a road through the State of Arkansas, must necessarily be

elevated upon piles. Is this either a secure or a frugal work? From the mouth of the Canadian the road must either follow the valley of the stream, or ascend to the high table lands between that river and the Rio Colorado. If it be attempted to follow the valley of the Canadian, it will be found so sinuous as to add at least forty per cent. to the direct distance from its mouth to its head,—it will be found that the stream meanders through its valley from the north to the south line of bluffs in such manner, that scarce two miles of its whole course can be traversed, without the necessity of crossing it, and the consequent necessity of constructing numberless and expensive viaducts; and these viaducts must be so elevated as to be above the stream during the season of floods. It is manifestly impossible to do this, because during every freshet the stream submerges its whole valley several feet in depth. Such is the testimony of Long, Pike, Col. Boone, (of the Army), Mr. Stanly, (a Santa Fe trader) and finally, of Dr. Gregg. But even supposing these difficulties overcome, there is one other which renders it altogether impracticable to ascend the valley of the Canadian. The stream, in a number of places, flows through *canons* for miles together, where the narrow chasm is shut in by solid masses of perpendicular rock. At the Angostura (or narrows), Dr. Gregg says: "We found the point of a table land projecting abruptly against the river so as to render it impossible to pass. Ascending the main summit of these craggy promontories, the eastern ridge of the Rocky mountains may be seen." And in another place Dr. Gregg adds, "The Canadian river flows through a *Canon* for a distance of more than fifty miles, throughout the whole extent of which the gorge is utterly impassable for wagons and almost for horses." The valley of this river cannot therefore be ascended with a railway.

If it be attempted to traverse the table lands of New Mexico, difficulties not less serious will be found constantly interposed. The whole of New Mexico, with the exception only of those portions traversed by great mountain chains, consists of elevated table lands, forming a succession of Plateaux increasing in height, and diminishing in circumference from the line of the State of Arkansas to the base of the Rocky Mountains. These plateaux are intersected in various directions by numerous streams and gorges, which, in the course of ages, have cut their channels to the depths of many hundreds of feet. This peculiar tendency of the streams of New Mexico to cut deep and narrow chasms—in many places through solid rock—has been remarked by all travellers, and is in direct contrast to the topographical appearance of all the more northern portions of the continent, except California and Oregon. As a general remark, it is correct to say that the peculiarity is confined to volcanic regions. To whatever cause the fact may be attributed, certain it is, that, in respect to New Mexico, it has been thoroughly established by Lieut. Abert, by Lieut. Emory, by Long, by Pike, by Humboldt, by Gregg, by Kendall, by Hughes, by Wislizenus, and by all travellers, scientific and unscientific, who have given us descriptions of the country. One of them says, when upon the table land overlooking the Canadian—"The valley below could only be reached by descending a frightful cliff of from 1200,

to 1500 feet, and very precipitous." The descents to the level of all the streams are uniformly abrupt. In consequence of this physical structure of the country, a railway across the table lands of New Mexico cannot be built without building viaducts across streams and ravines without number, and many of these viaducts would be from one to five miles in length. Of course *it is possible* to construct such a work; but should such a region be selected as a matter of choice?

After arriving in the valley of the Rio del Norte, the road must be diverted southward to the Passo del Norte, and then directly northward again to the valley of the Gila; for we presume no sane man proposes to surmount the stupendous mass of the Sierra Madre with a railway, or to bore a tunnel through eight or ten miles of primitive rock. This portion of the route is intersected by a number of streams and chasms, and the part of it from the Passo northward interrupted by numerous spurs of the Sierra Madre.

The only scientific account of the country from Santa Fe westward to the Pacific, is that of Major Emory, who accompanied General Kearney upon his expedition to California during the late war with Mexico. We will give the reader some idea of the structure of the country by the following facts gleaned from the tables published with his "Reconnoisance" by order of Congress.

The elevation of Santa Fe is 6,846 feet. From Santa Fe, General Kearney passed in nineteen days over a broken precipitous region to an elevation of only 4,138 feet, and in five days more ascended to 6,167 feet. On the following day he descended to 4,587 feet; and thus, varying up and down through a peculiarly desolate and rugged country to the Colorado, 176 feet above the level of the Pacific. From the Colorado General Kearney ascended the Cordilleras of California, and surmounted them through a pass 3,050 feet above the sea. The following ascents and descents will show the general character of the route pursued by Gen. Kearney:

September	21,	in 40 miles,	49½	feet	per	mile.
"	29,	" 46 "	44½	"	"	
October	17,	" 38 "	33	"	"	
"	20,	" 8 "	225	"	"	
November	1,	" 10 "	220	"	"	
"	6,	" 38 "	43	"	"	

From the Colorado to the Ocean.

December	1,	in 15 miles,	141½	feet	per	mile.
"	6,	" 10 "	233½	"	"	

Now, it must be borne in mind that the Rio Gila is the boundary between us and Mexico, as settled by the late treaty; that therefore we must construct a railway altogether on the north bank of that stream; that General Kearney crossed the river no less than fourteen times between the copper and gold mines, where he entered its valley, and the 112th degree of west longitude; that from thence to its mouth he followed its south bank, now Mexican soil; and that it is palpably impossible, as the "Reconnoisance" proves, to follow the valley of the stream along its north bank, because numerous stupendous walls

of primitive rock, sometimes miles in length, rise perpendicularly up from the very surface of its waters hundreds of feet.

The route followed by Col. Cook, farther south, is altogether within the Mexican boundary; otherwise, it would be preferable, because it shortens the distance 150 miles, and passes over a surface far less interrupted by mountains and chasms. The whole number of streams to be bridged along this whole line from Memphis to San Diego, would probably be several hundred, so numerous are the streams and the deep dry gorges cut by successive floods.

If from Santa Fe it is proposed to go to Monterey or the Bay of San Francisco, pray where is the route to be found? It is evident we cannot descend the Gila, and it is still more evident that no route can be found north of that stream until we ascend as high as the great south pass, that can be graded for a railway without an expense in cutting, tunneling, and bridging, which will far outweigh the profits to be anticipated from the work. We will not assert that it is an *impossibility*, for what is impossible to American skill and energy, directed by American practical genius; but we will say that the most stupendous monument which antiquity has left for our imitation and admiration would sink into insignificance as a *labor of man* compared to a railway through such a region. We profess to understand the geography of this district as well as any one living, because we have attentively examined all the authorities, and we have repeatedly interrogated a number of intelligent trappers and traders, to whom every ridge and peak, pass, and stream, valley and canon, are as familiar as to us are the scenes of our nativity. The only route which has, as yet, ever been discovered, over which a passage can be had from the northern valley of the Del Norte westward to reach the settled parts of California within reasonable distance, is the "mule trail" from Santa Fe to San Angelos, which ascends the Rio Chama to its head in the Sierra Madre; thence passing the ridge, descends the Juan to the Colorado of the West, and thence passes through the Wahsatch chain of mountains along the gap through which the Rio Virgin runs into the southern rim of the great basin of California. Col. Fremont, who has certainly had better means of ascertaining the facts than perhaps any one else concurs in the opinion that a railway cannot be taken through the Rocky Mountains at any other point than the south pass. The following sentence in a letter of Mr. Asa Whitney to the author of this article, proves this beyond cavil: "In justice to Colonel Fremont, I should say that I have had repeated conversations with him, and his opinion of route corresponds with yours."*

6. *Lake Michigan to Puget's Sound, or San Francisco.*—As far back we believe as the year 1840, Mr. Asa Whitney, of New York, presented a memorial to the Congress of the United States, praying for the right of way to the mouth of the Columbia, and proposing to build a railway to that point. Mr. Whitney, we learn by a private letter from him, has expended many years, a great deal of capital, and much labor in endeavoring to frame a plan which would revolutionize the

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This interesting letter of Mr. Whitney will appear in the next number of the Western Journal with appropriate comments.

commerce of the globe, and make all nations tributary to us in the prosecution of the trade of the east. A large portion of this time was consumed in voyages to and from the East Indies, for the purpose of making estimates of the value of the trade. We say, therefore, that Mr. Whitney does not deserve to be denounced as a stock jobber and speculator, as we have known to have been done by men without a tithe of his merit and good sense, and that on the contrary he richly deserves and will receive the commendation of all true men and the gratitude of those who are to come after us.

His proposition is to construct the road as a private enterprise, in consideration of a sale at moderate price to him by Congress, of thirty miles in width of land on each side of the road, from its eastern terminus at Lake Michigan to its western at Puget's Sound, or the bay of San Francisco. The sale of the lands he has calculated will afford the means of constructing the road within a period of twenty years. After a certain period the road is to revert to the government.

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Let us examine the whole line proposed by him with some minuteness. Commencing at Lake Michigan, the line will run by Prairie du Chien entirely across the State of Iowa, and strike the Missouri river at or near Council Bluffs, in nearly a south-west direction, over an undulating surface, about equal to almost any other which could be selected from the Mississippi to the west line of the States. The streams to be crossed are Turkey river, the Wabixipinikan, three branches of Red Cedar river, the Iowa river, the Des Moines, with several tributaries, the Racoon river, and Boyer's river. The amount of grading is inconsiderable, but the number of bridges, culverts, &c., great.*

At Council Bluffs, it is proposed to bridge the Missouri, and follow up the north bank or bluff of Platte river to its forks, and thence, upon the north fork, leaving it to the south, to near its head; and thence to the great South Pass. On this portion of the route, Major Long travelled as far as the mouth of Platte. From him, as well as from personal observation, it is here asserted that the country on the north bank of that river is much more broken than it is upon the south bank, or upon the divide between that stream and the Kansas. A railroad is certainly practicable along the route, but it will require much more of expense and labor than one south of that river. After passing the forks of the Platte, the route will enter the black hills ten miles west of Fort Laramie, and continue through them to the Sweetwater, a northern branch, and from thence to the South Pass. Now, the author of this article, whilst at Fort Laramie, not only made several excursions into the black hills upon the North Fork, but entered upon minute inquiries of traders, trappers, and Indians, and he is satisfied that a mule cannot be travelled up the North Fork to Sweetwater, nor can war parties of Indians, *on foot*, pass through without extreme difficulty and hazard. These inquiries were made in 1843, and made with the express purpose of tracing out a railway

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*Nicollet's Hydrographical Basin of Upper Mississippi; Repert to Congress, 1843.

line through the South Pass. There is no book from which the facts can be learned, and therefore, Mr. Whitney has only *guessed* that it might be done. The streams to be passed from Council Bluffs to the Sweetwater, are the Elkhorn, the Loup Fork of Platte, Wood river, and a number of small streams to the black hills, from whence a multitude of rapid torrents fringe the stream to its head. His route, therefore, must necessarily be changed to cross the North Fork at Fort Laramie, and thence follow the emigrant trail.

From the South Pass to the Soda Springs, in the northern bend of Bear river, the country begins to grow more broken and mountainous. Descending from the South Pass, the route strikes and follows Sandy creek to its confluence with the Green, (or Colorado of the West,) and crossing that stream, strikes Black's Fork; thence up that stream to the head of Muddy creek, (its main branch;) thence over a sudden dividing ridge to Bear river; and thence down that stream—making some detours to avoid *canons*—to the Soda Springs. This portion of the route presents no insuperable difficulties. The country, after passing Green river, becomes much broken, and the road winds much until it arrives at the foot of the dividing mountain ridge between Green and Bear rivers. This ridge is 8,234 feet above the sea, and the valley of Bear river is 6,446 feet; but the Pass no where ascends at a greater rate than 100 feet per mile.

From the Soda Springs to Fort Hall, after passing a dividing ridge, the route descends the Portneuf river valley to Fort Hall. The Soda Spring is at an elevation of 5,738 feet, and Fort Hall 4,779 feet, a descent of 23½ feet per mile; but the altitude of the dividing ridge is not given.*

From Fort Hall to Walla Walla on the Columbia, the route cannot follow the river bottom, because in many places the mountains present perpendicular walls on each side for miles together. Lewis and Clarke attempted to descend Lewis' Fork in canoes, but found it impracticable on account of the *canons* and falls; and Fremont says of Fort Hall that it "obtains nearly all its supplies from the distant depot of Vancouver by a difficult water carriage of 250 miles up the Columbia river, and a land carriage by pack animals of 600 miles."† With this account that of Captain Bonneville, who traversed this whole region, entirely agrees; ‡ and the author of this article has conversed with a number of old trappers and Indians, some of whom were with Bonneville, and they all concur in these facts. The route of Mr. Whitney must therefore follow the usual road of the emigrants, and that of Fremont, who expressly states that he sought the one which could be easiest travelled. Descending the rough and barren valley of Lewis Fork, this route crosses this river 160 miles below Fort Hall, then passes to the head of Boise river and follows that stream to its mouth at Fort Boise; here it recrosses Lewis river, and after passing over immense mountain chains for many miles, descends into the valley of the *Grand Ronde;* and thence through the great mass of the Blue mountains to the head of Walla Walla river, and

*Fremont. †Ibid 163. ‡Irving's Adventures at Bonneville,

down that stream to its mouth at Fort Walla Walla. The streams crossed on this part of the route are Pontneuf river, Panack river, Fall creek, Raft river, Swamp creek, Goose creek, Rock creek, a nameless creek, Lewis river, four creeks, Barrel Camp creek, Rock creek, five other creeks, some tributaries of the Boise, the Boise river, Lewis river again, the river Aux Malheurs, Birch creek, Burnt river, Powder river thece times, three branches of Grand Ronde river, the Umatilah river, and the Walla Walla, with several tributaries.

From Fort Hall to Walla Walla let us here add the result of barometrical observations, as given by Fremont:

On the 23d September, in a distance of 12 miles, we have, first: in one hour's travel, a descent of 83 feet; in another hour an ascent of 113 feet; in another hour an ascent of 21 feet; in another, 3 feet; in another, 36 feet; in another, 7 feet; in another, descent 3 feet; in another, ascent 4 feet; in another, descent 30 feet; in two more, ascent 1 foot; in another, descent 22 feet; in another, descent 71 feet; in another. descent 6 feet; in another, descent 21 feet.

On the 24th, in a distance of 10 miles. Between sunrise and noon, a descent of 31 feet, and between noon and sunset, a descent of 117 feet. On the 25th, in a distance of 13 miles—From sunrise to 2 P. M., ascent of 57 feet; one hour more, 10 feet; another hour, 15 feet; another, 13 feet; in another, 67 feet.

On the 26th, a distance of 17 miles. Sunrise to noon, ascent 88 feet; noon to sunset 295 feet.

On the 27th, a distance of 20 miles. Sunrise to sunset 322 feet, 16 feet per mile.

On the 28th. a distance of 25 miles. Sunrise to sunset; 623 feet; ascent, 24 feet per mile.

It must be recollected that the ascents and descents are for the most part sudden and precipitous, and that barometrical observations as here given, are far from conveying an accurate topographical idea. In passing the Blue mountains Fremont broke his barometer, and from the Grand Ronde the altitudes are now added from his topographical map. "From the waters of Powder river," says Fremont, "the road ascended to a dividing ridge," and then "directly descends into the Grand Ronde by the face of a hill so very rocky and steep, as to be apparently impracticable." This valley is 2,660 feet, the base of the Blue mountains is 2,700 feet. After traveling twenty-one miles, the mountain is 3,830 feet—54 feet per mile. In three miles more the elevation is 4,760 feet—311 feet per mile. In seven miles more, the elevation was 5,000 feet. On the western side these mountains descend more suddenly, and they are therefore impassable by a railway.

From Fort Walla to the mouth of the Columbia, the proposed route must descend immediately along the emigrant road on the river bank for some distance; but this is impossible, for the river rises sixty feet in the spring and submerges this road. If the river is left, a mass of abrupt mountains present themselves between the Walla Walla and John Day's river, and again between the latter and fall river. Below Fall river the great Cascade range presses up to the very waters of the river, completely shutting it in. Fremont says of the river, "en-

tering among the lower mountains of the cascade range, high and steep rocky hills shut it in on either side, rising abruptly to the height of 1500 feet above the water, and gradually acquiring a more mountainous character as the river approaches the Cascades." Again, "near the shore the river is bounded by steep escarped hills and huge vertical rocks, from which the waters of the mountain reach the river in a variety of beautiful falls, several hundred feet in height." Beyond the Cascade range, the coast stretches north from California west of the Wilhamette valley, and across the Columbia, presenting another impassable barrier to a railway. Of this portion of the route, about three hundred miles is through a fearful succession of volcanic mountains, intersected with frightful chasms, where a wagon wheel was never turned (though many attempts have been made), and where a solitary horseman finds it well nigh impossible to toil his serpentine course. Is it not the extreme of absurdity to dream of a railway here? Let those who are haunted with hopes or doubts, examine Fremont, Lewis and Clarke, De Smedt, Burnett, Farnham, &c., and they will be satisfied.

Recently Mr Whitney seems to have an idea that by turning northward from the South Pass to the head of Salmon river, a more feasible route can be found. We are assured this is not so. Lewis and Clarke in their expedition westward, struck Lewis' Fork of the Columbia river, near its source, and made an attempt to descend it in canoes. This attempt was frustrated by the interposition of narrow chasms, through which the stream rushed with fearful rapidity, the walls of which rose from the waters edge to the height of more than 1200 feet. Captain Clarke then attempted to find a practicable passage for horses down the right bank of the stream. In a few days he came upon a tremendous ridge of volcanic rock, so rugged and precipitous, that it was evidently impassible even for men on foot. In his attempt to ascend this ridge, he received serious injury, and was compelled to retrace his steps. The Indians too, assured him that no *trail* existed in that direction. The travellers then took a trail pointed out to them by the Indians, which followed the base of this great chain to the foot of the dividing ridge between Lewis and Clarke rivers, with which it united; and surmounting the latter followed the valley of Clarke's river for some distance, and then passed over a dangerous and precipitous mountain ridge into the valley of Salmon river. With this account of Lewis and Clarke that of captain Bonneville entirely concurs, and the accounts derived to the writer from the companions of Bonneville, and other old Trappers, confirms and fortifies the statements of the journals of the travellers.

7. *St. Louis to San Francisco and Oregon.* During the last sesssion of the congress of the United States, two proposals for a railway from St. Louis to the bay of San Francisco were submitted for the consideration of that body. The first proposition originated with Messrs Bayard & Co., and proposed to construct the road in eight years upon certain specified conditions, from St. Louis into the valley of the Arkansas and thence through the Rocky mountains along the 38th parallell of latitude or near it, to the bay of San Francisco. The com-

pany also proposed to deposit in the treasury of the United States five millions of dollars as security for their fidelity to their engagements. There are two insuperable objections to this proposition. The first is that the congress of the United States has no authority to create corporations, the power to do so having been refused to it by an express vote of the framers of the constitution. It is no answer to this objection to cite the charter of the late Bank of the United States, because that institution was created as a *means* and not an *end*; and it was because it was deemed a "necessary and proper" *means* to facilitate the collection and disbursement of the public revenues that the Supreme Court decided it to be within the purview of the constitution. The second objection to the scheme is that a railway through the mountains south of the South Pass cannot be constructed,—at least without an amount of labor and expense for which there is no inducement when a shorter and less difficult route has already been discovered, and furthermore this scheme involves the necessity of making the road earn dividends for the stockholders, an objection which will be noticed in a subsequent part of this article.

The second proposition for a railway from St. Louis to San Francisco was introduced by a bill into the senate of the United States by Col. Benton of Missouri. It was gratifying to all the friends of this great measure to find that Col. Benton who had so long cherished his original scheme of 1818 for the navigation of the Missouri and Columbia rivers; and who had as late as the session of 1846 elaborately and ably defended that scheme in his place in the senate; had at last reconciled it to his feelings to unite with those friends of a Pacific railway who had pressed the matter upon public consideration for the last fifteen years. Our gratification was enhanced by the consideration that to support this great measure, Col. Benton had not only to abandon a long and deeply cherished system, but to adopt another which was in direct conflict with his feelings, personal and political.

The bill of Col. Benton proposes that three fourths of the proceeds of the sales of public lands in California and Oregon, and one half of the proceeds of the sale of all other public lands of the United States shall be set apart by congress for the construction of the road with a branch to the Columbia river. The bill also provides that in portions where a railway cannot be constructed McAdamized, plank or other suitable descriptions of road shall be substituted,—that a space of one mile in width from the state line to the bay of Francisco shall be forever reserved for roads in all future time,—that the road shall be built under the direction of the President of the United States,—and that when completed it shall be let out by contract to companies conditioned to be repaired and certain rents to be paid into the treasury. Col. Benton also, as we infer from his speech upon the introduction of this bill, indulges an expectation that a route can be had near the sources of the Arkansas through the mountains to the bay of Francisco. As an incipient measure the proposition of Col. Benton is unexceptionable, but we apprehend that quite a number of material alterations must be made in the provisions of his bill, before it can receive the sanction of the public or of congress. The means provided for the construction of the work are

evidently insufficient to complete the latter half of it before the first portion will have become worthless with age. The sales of the public lands at the best have rarely yielded over $3,000,000, per annum altogether and a little over one half of this sum would not construct the work in twenty years. Besides it must be remembered that the military land claims created by our late contest with Mexico will materially diminish the sales for some years to come, and that in California we shall probably find ourselves compelled by public opinion to make gratuitous grants to actual settlers as has already been done in respect to Oregon.

As late as the 19th day of April, 1849, a mass meeting of the citizens of Boston was held, by which a series of resolutions were passed approbatory of a plan presented to the meeting by P. P. F. Degrand, Esq. It was proposed "that a company be chartered by Congress to construct a railroad from St. Louis to San Francisco, with a capital of $100,000,000; and that the company after having paid in $2,000-000, shall have the right to borrow United States 6 per cent. stock to such an amount (not exceeding $98,000,000) as may be sufficient to finish the road and carry it into full operation with a double track." It is farther proposed "that congress shall give the company a strip of public land ten miles wide on the north side of the road, and the land for the bed of the road, and for depots, and the right to take from the public lands wood, gravel, stone, iron and other materials necessary to construct the same." The proposition contains other minor details for the rapid prosecution of the work.

This plan is liable to the constitutional objection already alluded to respecting the power of Congress to create corporations, and also to the objection that the road is to pay dividends to the stockholders.

Let us now proceed to a topographical examination of the route from St. Louis to the Bay of San Francisco. The route which we shall propose for this great Railway is not one through a region unknown to science and the world. We make no *guesses*, as has been done and must be done by all who advocate the claims of other routes. We do not say that passes through the mountains *may* be found, and that the *probabilities* are that a practicable line for a railway may be had from St. Louis to San Francisco, as has and must be said by the advocates of all the routes but ours. We shall propose a route which with but slight variations (and those variations undoubtedly for the better) has been already surveyed along its whole line.—a route along which barometrical and other scientific observations have already been made—a route which has been minutely described by an authorized and eminently well qualified officer of the Corps of Topographical Engineers, and maps and profile sections of which are already deposited in the Topographical Bureau at Washington. We shall propose a route which was travelled by Mr. Henry, a fur trader of intelligence as far as the vicinity of Fort Hall, in the year 1809.—which has been familiarly known to the children of the mountains from that day to this—over which they have constantly carried wagons and carts laden with merchandize—and over which more than twenty thousand emigrants to Oregon, the Salt Lake, and California have already passed. We shall propose a route the last portion of which,

from the Salt Lake to the Bay, was discovered by Mr. Peter Ogden, a fur trader in the employ of the Hudson's Bay Company as far back as 1811,—which has been repeatedly followed since by intelligent bodies of traders,—by which a party of men under the orders of Capt. Bonneville, proceeded to Francisco Bay—which has been traversed and described by Bryant Bidwell, and other travellers—which has been surveyed by Col. Fremont—and over which emigrants with families and wagons have repeatedly passed, and more than thirty thousand men with six thousand wagons and one hundred thousand head of stock are now passing.

The portion of this route from St. Louis to the western boundaries of the State has been so much better described than we can hope to do it, by W. R. Singleton, Esq., in the last number of the *Western Journal*, that we shall here insert his observations with the assurance to the public that they are the observations of an accomplished Engineer, and one who is probably more familiar with the topography of this section of the State than any one living.

"After a careful examination I at once pronounce it by all means the most practicable and economical to pass from St. Louis westwardly, until by some small stream the valley of the Missouri can be reached just above the Big Bonhomme Bottom, thence around the slopes of the hills on the south bank of the Missouri, to the Lamine; up the valley of this stream to Black Fork, to Davis' Fork, and thence on to the main or Lamine ridge, between Buck Knob and Wagon Knob, in LaFayette county; thence on said divide to Cool Spring and Lone Jack in Jackson county, and thence crossing the breaks of Little and Big Blue, reach the "plains," as they are familiarly called, on the Santa Fe road at Black Jack Point. That this road can be constructed at a less cost than any other, all must admit. From St. Louis to the Missouri river but one small bridge is required; thence twelve other small bridges to the Gasconade—a large one there; thence three small ones to Osage—a large one there; thence eleven to mouth of Lamine—total, twenty-seven small bridges, average of one hundred feet, and two large ones. It is preferable for two reasons to use the valley of the Missouri: first, the grades will be uniform; and second, the branches of any main streams will all be crossed at one point, thus avoiding the difficulties always encountered in crossing a country over the breaks of the drainage; thereby giving a zig zag grade to the road. In addition, the amount of water to be passed can always be done at one point much better and cheaper than in fifty or a hundred. Again, the Missouri itself will be avoided; whereas on the north side it must be crossed twice. That the south side of the Missouri is preferable, is obvious: the amount of water received into the river from the north is much greater than from the south; almost all the streams on the north side head some distance in Iowa; and the whole drainage of the north half of the State, is through the Missouri river; whereas, on the south half, not more than two-thirds of it is drained by the Missouri. These are important considerations, and have influenced me in forming my opinion."

To coincide with the line indicated by us the latter part of Mr.

Singleton's section must be slightly varied to cross the Kanzas river near its mouth.

From the mouth of the Kanzas to the forks of Platte river, this route ascends the fertile valley of the Kanzas to Blue river, and follows that stream nearly to its head, from whence, in 25 miles, it strikes the Platte near the head of Grand Island, and follows the valley of that river to its forks. This part of the route is absolutely free from impediments, and needs no grading, so admirably does it lie for a railway.

Crossing the South Fork, where a bridge is requisite, it follows the North Fork to Laramie, through a valley well nigh as level as a floor, and without crossing a stream until it arrives at Laramie's Fork, which is about ten yards wide.

From Fort Laramie to the South Pass, the road will need but little grading. Fremont says: "The road which is now generally followed through this region, is a very good one, *without any difficult* ascents to overcome." He adds: "From the mouth of the Kanzas to the Green river valley, (west of the mountains,) there is no such thing as a mountain road on the line of communication."

The South Pass is 7,490 feet above the Gulf of Mexico. August 13th, Fremont's descent in 24 miles, was 22 feet per mile. August 14th, in 25 miles, 11 feet per mile. August 15th, in 29 miles, 15 feet per mile. August 16th, in 26 miles, 3 feet per mile. August 17th, in 21 miles, 3 feet ascent. August 18th, in 32 miles, about 15 feet ascent. August 19th, in 28 miles, about 6 inches per mile descent."

From the South Pass the route would follow the line of a road habitually travelled by the Traders and called "Sublette's Cut off" to the Soda springs situated on the northern bend of Bear river; and from thence it would pass a little south of west to the valley of Humboldt or Mary's river. This is the only portion of the route not actually surveyed by Col. Fremont. That enterprising officer travelled from the South pass up a western tributary of the Colorado of the west, and over a dividing ridge into the valley of Bear river and followed that valley in its semicircular course to the entrance of the river into the Great Salt Lake and thence proceeded westward over some mountain ridges to the valley of Mary's river. "Sublette's Cut-off" derives its name from the fact that there is a saving of 75 miles of distance from the South Pass to the Soda Springs and of upwards of one hundred to the valley of Mary's river. It is also the preferable route because the whole of the mountain ridges are entirely flanked from the South Pass to Mary's river and the general course of a right line from St. Louis better preserved. On this part of the route but little grading would be required. The section from Soda Spring to the valley of Mary's river was traversed by a party of Bonneville's men and no mention is made of mountains or other impediments in his narrative. Besides we have ourselves travelled the whole line as far as the Colorado of the west, and have seen more than fifty men who have passed from thence to Mary's river, and therefore speak advisedly on the subject.

Down the valley of Mary's river there is not a single canon which may not be easily turned, and for nearly its whole length there would be but slight labor in grading. Where the emigrant road strikes this river it is 4,700 feet above the sea, and at the point where it sinks it is 4,200 feet. The termination of this river is within fifty miles of the base of the Sierra Nevada, and opposite the Salmon Trout River Pass, which is only 7,200 feet above the level of the sea, and less than half that above the level of the Basin.* This pass is forty miles above New Helvetia, by which the route descends the valley of the Sacramento, directly through the gold region, to the bay of Francisco, without any impediment whatever.

There are two other passes of the Sierra Nevada. One of these leads into the valley of the Sacramento by following Carson river to its source and then descending the American fork of the Sacramento; and the other proceeds south from the sink of Mary's river into the valley of the San Joaquin near its mouth. It may be possible that one of these passes will be found preferable to the Salmon Trout Pass, but that is uncertain, and as we have found a pass through which thousands of loaded wagons will go during the present season and which has been found by Col. Fremont to be practicable our object is attained.

Having shown that the routes proposed by Lieut. Maury, and Mr. Whitney, if practicable at all, (which is difficult of admission,) pass over a country much worse than the new route proposed, let us now give some additional reasons why the new route should be preferred.

The new route, as far as the South Pass, does not cross as many streams as either of the other two, nor does it pass over as much broken country, where 'cuts' and 'fills' would be requisite. This will be a great saving of expense.

The new route passes over a larger quantity of fertile land than either of the others. The route to Santa Fe, beyond Council Grove, (only fifty miles from the State line,) where it has been shown Maury's road must pass, is absolutely sterile to Santa Fe.† Lieut. Emory says: — 'Nov. 24. All of Northern Mexico, embracing New Mexico, Chihuahua, Sonora, and southern California, as far north as the Sacramento, are, as far as the best information goes, the same in the physical character of its surface, and differs but little in climate and products. In no part of this vast tract can the rains from Heaven be relied upon to any extent, for the cultivation of soil. The earth is destitute of trees, and in a great part also of any vegetation whatever. A few feeble streams flow from the great mountains. These are separated by plains, or mountains, mostly without vegetation, and may be called deserts. The cultivation of the earth is, therefore, confined to those narrow strips of land which are within the level of the waters, and it involves a degree of subordination, and absolute obedience to a chief, absolutely repugnant to the habits of our people. The chief,

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*Fremont's Geographical Memoir.

†Gregg, J. T. Hughes, Emory, and others.

who directs the irrigation, must be implicitly obeyed. A departure from his orders may endanger the means of subsistence of many people." And, in many other places, Major Emory represents the whole of this country in even worse colors. His testimony is amply fortified by others.* There is, then, no agricultural region on this route.

From the mouth of the Platte river, west to the mountains, there is no cultivatable land on the north side of that stream. This is the testimony of Long, and many others. Nor is there a single spot of soil on Whitney's line, until the Bear river valley is reached; and his road leaves this valley at the Soda Springs, including only one-half its length. From this point, several hundred miles down Lewis river, to the Grande Ronde, the angel of desolation has set his seal upon the whole land. Fremont says, at Fort Hall: — 'Beyond this place, on the line of road along the barren valley of the Columbia, there does not occur, for a distance of 300 miles, a fertile spot sufficiently large to produce the necessary quantity of grain, or pasturage enough to allow even a temporary repose to the emigrant. The Grande Ronde is only twenty miles in diameter, and beyond this, except a small patch at Walla Walla, the country is uninhabitable to Vancouver,† As to the portion of Whitney's line through the State of Iowa, that is more than overbalanced by the connecting line through Missouri, herein noticed.

Now, from the mouth of Kanzas, for two hundred and seventy-five miles west, there is as fine and fertile a soil as the world affords, well timbered and watered.‡ Thence up the southern valley of the Platte to the Forks, the soil is better than on the north side, and from the Forks to Fort Laramie, Col. Fremont who analyzed the soil, found it a fertile formation of marl and earthy limestone. Thence to Bear River Valley the soil is indifferent; but down the whole course of that stream Fremont states the valley to be delightfully fertile. And down Mary's river its valley is fertile, and upon the Sacramento we have the largest body of rich arable land west of the Rocky mountains.

The new route should be preferred, because the territory north of the Platte has already an ample commercial outlet for such a country down the Missouri river; and because the Missouri and Columbia, in the far future, when population has spread along their banks, will be sufficient for the purposes of interior trade from Oregon to the Mississippi valley; and because, unless we unite California to the Union, by a railway, it will be, to all intents and purposes, cut off from us commercially, and as a necessary result in social and political feeling and interest. Of what advantage will the commerce of the Pacific coast, with all Asia, be to us, without a railway? We cannot buy their products, because ours are nearly the same. No exchanges can be made between us. California will command the markets of

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*Emory's Report, Abert's Survey, Hughes', Gregg, Humbolt, and Pike.
†Fremont. ‡Fremont.

all Asia, because she can substitute a barter for a trade, in cash, and because she can undersell all others.

The new route should be preferred because a railroad can be constructed on it for less than half which would be required on either of the other lines. East of the mountains the other two are more cut up by streams and bluffs, and west of them they run absolutely for hundreds of miles across immense mountain chains; whereas the new route is nearly free of intersecting streams, and is only intercepted by the Salmon Trout Pass, which we have shown to be practicable.

The new route is preferable because the western terminus is better. The mouth of the Columbia cannot be entered by large vessels, and to take the road to Puget's Sound would involve the expense of a bridge across that great river; and besides, there is no safe harbor at Puget's Sound. The Bay of Monterey, although good, is not equal to that of Francisco, and upon the latter and its tributaries, nearly all the good soil of California lies; and, therefore, this must be the centre of business and population.

The means for constructing the work abound more plentifully upon the new route than upon either of the others. Timber is abundant on the lower Missouri, the Mississippi, and their tributaries, and there is good timber for 200 miles upon the Kanzas river. From the mountains westward to the Salt Lake, good timber is abundant, and down Mary's river, and in the Sacramento valley, there is the finest timber in the world. On the route of Lieut. Maury, there is not a solitary stick of timber west of the State line. On that proposed by Mr. Whitney, there is none this side of the mountains, and none beyond Bear river, until we reach the Blue mountains, five hundred miles below. Directly on the line from St. Louis there is the richest and most extensive bed of iron ore in the known world; and who can doubt that if this work should be undertaken capital would instantly seek investment where there was so great a demand? Even at this time the best judges are of opinion that the working of this ore would yield enormous profit. Here, then, enormous transportation would be saved, and a rich source of wealth and prosperity be developed.

Those who are not in the habit of reflecting upon the subject are apt to imagine that the shortest line between any two points situated upon a given degree of latitude is the line which follows that parallell. In the construction of works of no great magnitude, this practical error is of litt'e moment; but when it is proposed to construct a costly work like a great railway for a distance of over two thousand miles, the difference between the length of the parallell of latitude, and the shortest line which can be traced upon the sphere of the globe becomes a matter well deserving serious consideration. As this is an error which nearly all who have written and spoken upon this subject have fallen into including even all those venerable Fathers of the Senate who have given us their views it should be corrected once for all. The shortest line then between two given points upon a sphere is the arc of the great circle in the plane of which they are situated. A great circle of the globe is a circle so drawn around it that its di-

ameter will pass precisely through its centre. The Equator is a great circle of the globe and the parallells of latitude north and south of it are a series of smaller circles. Consequently the farther a given parallell is from the Equator, the farther does it diverge from a direct line drawn between any two points situated upon it. In the construction of a railway as far north as any line proposes for this work, this difference becomes a consideration of great interest. This explanation has been given for two reasons. The first is that a great circle passing through St. Louis and San Francisco would approach much nearer to the Great South Pass than to the sources of the Del Norte, the Arkansas or any other point proposed for the passage of the Rocky mountains; and that consequently the route for the road which must nearly coincide with this great circle, must of necessity be the shortest. Therefore the route indicated in this article is the preferable one as respects distance.

The second reason for the explanation given is, that Mr. Whitney, in a private letter to the writer, urges that his route must be the shortest because it starts and terminates three and a half degrees further north than the line herein proposed. This argument might pass muster if Mr. Whitney proposed to carry his railway through the north pass at the sources of the Missouri to Puget's Sound; but it does not suit his views to make that proposition, because the people of the country will not consent to the construction of any road which does not promise, in the future to bind to the Union both our great colonies on the Pacific coast. The argument of Mr. Whitney on this point is palpably erroneous, because, in order to get to the mouth of the Columbia or to Puget's Sound from Lake Michigan through the South Pass, he will be compelled to deviate from the great circle route between those points even farther than the parallel of latitude does, because the South Pass is farther south than either the eastern or western terminus. The argument is clearly fallacious.

Precisely the same objection lies to the proposed route from Memphis to Monterey or San Diego, for Memphis is situated in latitude 35°, and about 20′ north; San Diego is situated in latitude 32° 37′, and Monterey in latitude 36° 40′; and no one who possesses any knowledge of the country dreams that a railway can pass the Sierra Madre at any other place than the Passo del Norte, and this is situated in latitude 31° 40′, not only out of the line of the great circle, but far more out of it than the parallel of latitude.

The only other consideration necessary to be weighed in a comparison of the relative merits of the routes proposed, is that of distance. The distance is material in two aspects of the subject,—1st. In respect to its influence on the trade between Europe and Asia: and 2d. In respect to the trade between the Atlantic States and the Pacific ocean. In both these aspects of the subject, a single glance at the map of the Union and of the world will be sufficient to satisfy the reader that the route from Memphis westward cannot come in successful competition with either of the other two. It is evidently much farther out of a direct line from Europe to China; nor can it be made to connect as favorably and justly with the systems of internal im-

provements completed and in progress within the United States. The question as between Mr. Whitney's route and the one from St. Louis westward, is, at first glance, more doubtful; but deliberate examination will give a decision in favor of St. Louis.

From Lake Michigan to Prairie du Chien is	150 miles.	
Thence to Council Bluffs - - -	350 "	
" South Pass - - -	800 "	
" Walla Walla - - - -	770 "	
" Puget's Sound - - -	300 "	
		2,370
From Puget's Sound to Changhae - - - -		5,200
	Total,	7,570
From St. Louis to the mouth of Kanzas river	275 miles.	
Thence to the South Pass - - -	900 "	
" Humboldt river - - -	400 "	
" Northern bend of said river	100 "	
" Salmon Front Pass - -	350 "	
" New Helvetia - - -	146 "	
" Francisco Bay - - -	40 "	
		2,211
From Francisco Bay to Changhae - - - -		5,500
	Total,	7,711
From St. Louis to the South Pass - -	1175 miles.	
Thence by the northern bend of Humboldt river to Puget's Sound - -	925 "	
		2,095
Thence to Changhae - - - - - -		5,200
	Total,	7,295

These distances are given after an examination of Niccolet, Fremont, Long, Bidwell, and Bryant. There are, however, satisfactory reasons why the distance must be too short as respects Mr. Whitney's route, and too long as respects the one from St. Louis. These reasons are as follows: — Mr. Whitney has estimated his distance to the South Pass, from Col. Fremont's estimate from the mouth of the Kanzas to the Pass. The estimate is unfair, because the route which Fremont travelled proceeds with tolerable directness to the Pass, and neither Mr. Whitney nor any one else can assert that the mountains can be passed on the north bank of the north fork of Platte river in a route as direct as the one from Fort Laramie to the South Pass. We speak advisedly, because we made many inquiries of those best informed, who have spent years in that region, and we have found no one who could tell us of a practicable bridle path along the north fork

of Platte river to the South Pass. Nor is it fair for Mr. Whitney to estimate the distance for a railway from the South Pass to Walla Walla, by the distance of the road pursued by Col. Fremont, because there are several places on this part of the route where a railway cannot be carried. Such is the fact in regard to the passage of the blue mountains which press up to Lewis's fork of the Columbia, in a solid wall, and must therefore be turned in some other direction. How far would this take a railway from Fremont's line of travel? It is impossible to say. Nor is it fair to make an estimate of distance beyond Walla Walla, on the hypothesis, that a railway can follow the valley of the Columbia as Fremont did. This is evidently impossible, with an annual flood which submerges the whole bottom to the depth of many feet. If his railway leaves the river bottom,—where can it be taken in as short a distance? The question cannot be answered, because it is impossible to do it satisfactorily. On the other hand, if a railroad is taken from St. Louis to the bay of San Francisco, with a branch to Oregon, the distance is greatly lessened in two respects, — 1st, the branch to Oregon will leave the branch to Francisco bay, at the northern bank of the Humboldt river, and passing the dividing ridge between Oregon and California, descend the valley of the Walla-mutte. From the South Pass to the mouth of the Columbia, we are informed by a letter from Mr. Applegate, — formerly a citizen of Missouri, and now a citizen of Oregon, — by the way of Humboldt river and the Walla-mutte valley, the distance is some two hundred miles less than by Fremont's route down the valley of Lewis river. Mr. Applegate we know to be an intelligent and truthful man, and a good surveyor. He emigrated to Oregon by the way of Lewis river, but having experienced unanticipated hardship and difficulty, and lost a son thereon, he determined to find, if possible, a better road. For this purpose, equipped with a good compass and chain he traversed the valley of the Walla-mutte, passed the dividing ridge, and descended into the valley of the Humboldt river, and thence to Fort Hall. He describes the road as in all respects the best, and it would have superseded altogether the use of the one down Lewis river, but for the ferocity of the Klamath Indians, who seem to be the Ishmaelites of Oregon. 2d. Leaving the route pursued by Fremont at the South Pass, the new route follows Sublette's cut-off to the Soda Springs in the northern bend of Bear river, where it intersects the route of Fremont, thus saving seventy-five miles of distance in that brief space of travel.

The proposed line from St. Louis to San Francisco and Oregon, is preferable to either of the others proposed, because its connections from the Mississippi eastward and on the Pacific side of the mountains, will be in all respects, more just, more natural, more economical, better adapted to the physical structure of the country, and better calculated to conform itself to the future destinies of the whole United States.

If the line from Memphis to San Diego, Monterey or San Francisco, shall be adopted, how is it proposed to connect the vast territory of Oregon with it? It is obviously impossible to do so. The topo-

graphy of the country absolutely forbids the hope. And is it not an object of primary importance to us, that this connection shall be made? Most assuredly it is —otherwise we may lose that great colony altogether, and we may lose with it the control of the shortest route to the coasts of Asia, and these are certainly considerations of great moment. But it may be as it has been said that this route should be preferred because it passes through New Mexico, and will consequently bind that territory in lissolubly to us, and build up a system of overland trade which will ultimately prove very productive. The answer to this is that the security of Oregon through which the great thoroughfare to the Indies must ultimately pass, and which may be seriously endangered at any moment, upon the occurrence of a difference with England, from the concentrated and powerful military and naval force now collecting on the southern point of Vancouver's Island, and in the adjacent sound, is certainly a question of more pressing interest than a slight extension of trade with New Mexico. And moreover a branch can be made from the vicinity of Fort Laramie, along the fertile eastern base of the mountains through the valley of Taos to Santa Fe.

If the line advocated by Mr. Whitney shall be adopted, the road must be branched in the vicinity of the Soda Springs instead of farther westward to this there are the following objections.

First. Because the branch which descends Lewis river passes over a district so hopelessly desolate that science herself could not convert it into a productive country; and second, because the length of the branch will be about seven hundred miles greater than if the road shall be branched at the northern bend of Humboldt river as proposed in this article, and consequently enlarge the expense of this great system of political and economical improvement about fourteen millions of dollars; while on the other hand if the Oregon branch shall be taken along the line we suggest, it will pass directly through the heart of the only large fertile tract of territory in Oregon, and confer upon that great colony incalculable benefits in all future time. Nor is it a sufficient answer to this argument to say that the valley of the Kooskoosie and of Clarke's river, including a vast tract of fertile land, and blest with a salubrious climate, could be connected with a branch descending Lewis river; for that whole district can be much more easily, readily and cheaply connected with the coast by a shorter line of railway from the northern bend of Clarke's river to Puget's sound, as a glance at the Map will satisfy the reader.

It has already been shown that the route from Memphis westward, could in no event compete with either of the others as a route from Europe to China; and it has also been shown, that in consequence of the physical structure of the country from the Mississippi to the Pacific, the route proposed by Mr. Whitney, diverges very far from the line of a great circle, whilst the one from St. Louis westward very nearly coincides with it, and that for this reason alone (if there were none other) the latter route must be the shortest from Europe to the Asiatic coast. It only remains to be proven that the route from St. Louis will connect more favorably, more beneficially, and more justly,

with all the interior natural and artificial lines of commerce in the Union, than either of the others; and this is easily done.

With a terminus at Memphis, the only connections which can be made, will be with the Mississippi, Ohio and Missouri rivers, and their tributaries, and with the great southern chain of railways from Chattanouga through Georgia, South and North Carolina, and Virginia to the Potomac, and the line from Mobile northward towards the mouth of the Ohio. The commerce of the Pacific would not be connected with the great lines of improvement north of the Ohio, and in ascending the Mississippi and Missouri rivers, it would be absolutely travelling on the back track. With a terminus at Prairie du Chien, the connections which could be made conveniently would be with Chicago, the great lakes, the eastern line of railway from Chicago along the southern border of the lakes to Buffalo, Albany, Boston and New York, and the Mississippi and its tributaries. This system of connections would certainly be preferable to those to be found at Memphis.

With a terminus at St. Louis, the connections would be—1st. with the Missouri river at the mouth of the Kanzas, where a depot for the trade of the Pacific would grow into existence. 2d. With the Mississippi and Ohio and all their tributaries. 3d. With the great southern system of railways, the surveys and contracts for which already bring them to the mouth of the Ohio, where a branch from St. Louis will instantly meet them. 4th. With the direct line to Cincinnati, which will bring St. Louis in connection with western Kentucky, Tennessee, Georgia, and South Carolina, by a branch to Nashville; also with the central and eastern portions of Kentucky, and with the State of Virginia by a branch to Louisville. 5th. With the great line leading east through the States af Illinois, Indiana, Ohio, and part of Pennsylvania to Pittsburgh, and thence to Philadelphia, traversing the central region between the Ohio river and the great lakes. 6th. With the navigation of the northern lakes via the Illinois and Lake Michigan Canal, the Wisconsin and Fox river canal, and a northern branch of the great central line, which would of course be forthwith constructed to Chicago, there to unite with the railroad line which fringes the great lakes to Buffalo and the east.

These are the connections which can be anticipated for each of the three proposed routes, with lines of improvement already constructed or in contemplation, and we think that no fair minded and reflecting mind can compare them without giving the decided preference to St. Louis as the eastern terminus of the Pacific railway. And looking to the progress of the country for ages to come, is it possible to anticipate a state of circumstances where future lines of improvement, looking to the permanent union and welfare of the whole country, will connect as favorably with either of the other points named, as the city of St. Louis? As to the fancy of Mr. Whitney that St. Louis would take the Boston and New York merchants out of their direct road to Asia, it has been already answered by tracing the course of his road from Lake Michigan to Puget's sound. We undertake to

say that the route through this city is, beyond cavil, the shortest *practicable* one to the commerce of the east.

But deeply important to the present and future prosperity of the whole Union, as the project of a Pacific railway must be admitted to be by all who will take the trouble to reflect upon the subject, there is great reason to doubt, whether party warfare, sectional jealousy, and personal ambition may not delay its construction for many years to come. But all these causes united, cannot finally crush the scheme. The progress of population and of emigration westward, the steady growth of manufacturing power, the rapid developement of our agricultural and mineral resources, and the increasing necessities of commerce, all point, as with the finger of destiny, to the consummation of the grand design. Even now, if the friends of the measure could all be harmonized in opinion and act vigorously in concert, the authorities of the Union would be overwhelmed by the moral force which could be brought to bear upon them. It is gratifying to believe that thus far, although great diversities of opinion have been expressed relative to the route upon which a railway should be constructed, the means by which it is to be paid for, the manner of its construction, and the disposition which should be made of it when finished; no irreconcileable, or implacable sentiments of jealousy and hostility, have been manifested. If we are wise we shall continue to cultivate this good understanding, we shall reason with one another calmly, deliberately, and fairly,—and we shall preserve a settled determination not to mingle this great subject with the transient personal jealousies and party strifes of the day. Our settled purpose should be to bring about *the construction of a Pacific railway, in the briefest possible time, along the most national route, and we should invoke upon the heads of all who attempt to pervert this great question to personal or party ends, the maledictions of the present and the contempt of future generations.*

We have no fault to find with Mr. Whitney and his friends, nor with Lieut. Maury and those other estimable and intelligent citizens who are exerting themselves in favor of their respective projects. All these parties deserve and receive our hearty thanks for their efforts to enlighten the public opinion of the country, and to move the whole mass of the American people to prompt and decisive action in favor of the grand design. They are as much entitled to their opinions and to the respectful hearing of the community as we are, and so long as they shall forbear to violate the truth of history and the integrity of existing facts, to subserve the purposes they have in view, we shall give to them our respect and confidence. Cultivating, as we do, this cordial and single-hearted sentiment, we feel assured that whatever we shall urge upon them for the benefit of the common cause, will be received in the same spirit in which it is addressed, as the expression of an anxious solicitude to do justice to all and to reconcile all minor differences for the sake of the great end.

If unhappily our present diversities of opinion as respects details shall be aggravated by imprudence or design into settled hostility, it needs no Prophet to foretell that the consummation of the end of all our labors will be indefinitely postponed. Upon the supposition that

one and one only of the three routes now prominently before the public shall be finally insisted upon, irrespective of the claims and interests of others, what must be the inevitable result? Suppose, for a moment, that the bill of Mr. Whitney shall be insisted upon, where are the votes to come from to pass it through Congress? It is perfectly certain that not a single vote from the Southern States would be cast in its favor, because the route proposed is too far north to accommodate their commerce. It is no answer to this to say, that Mr. Whitney's bill leaves the *choice of a route* to him, and binds him to none. We all know what his opinions are respecting the route, and if we did not know it, the simple fact, that a bill proposes to confer such a power upon a single individual would be an insuperable objection to it. The whole of the southern vote added to the strength which the friends of St. Louis could bring to bear, would then most certainly defeat the bill, and every attempt to pass it would result in the same way. Again, suppose that the friends of Memphis determine to insist upon their scheme as against all others, what must be the result? Certainly not a solitary vote will be cast in its favor from the Northern States, and moreover the State of Missouri would join them. This result is palpable.

And lastly, if the friends of St. Louis should be so unwise as to make war upon other sections of the Union and other plans for a railway, a like fate would assuredly await them for a long time to come, for the whole South would move in a body against them, and Mr. Whitney's plan has been so long before the public, and so indefatigably nurtured that he can always secure votes sufficient to defeat St. Louis in conjunction with the South. It is barely possible, that, if a war shall be gotten up between the friends of the three routes, it might terminate, after years of malignant hostility, in a corrupt and unprincipled, but successful compact between two of them at the expense of the third, and consequently to the permanent detriment of the country. But we will not anticipate a result so disgraceful; we will indulge the fervent hope that peace and unity shall continue to be cultivated, and that this great work shall be not only one of material advantage to the country, but a perpetual monument of the wisdom, the integrity, and the patriotism of its founders.

We have pursued this course of argumentation, because it is just and legitimate, and because we are anxious to produce entire harmony and concert of action among the friends of the measure. He who should imagine for one moment, that our suggestions proceed from any apprehension concerning the strength of our cause, would be wide indeed, of the mark we have shown, we believe unanswerably that St. Louis is preferable to any other point on the Mississippi, which has been, or can be proposed as an eastern terminus for a Pacific railway,—we know that in a controversy of this kind, we have everything to gain and nothing to lose by procrastination,—we feel assured that sound fact and sound argument, will, in the end, have a controlling influence upon the public opinion of a free country,—we see daily evidences that public sentiments is already with us, and we

have an abiding and fixed faith that if a war is waged upon us, we have, and can procure strength, to defend ourselves and defeat the schemes of others, and, that finally, the necessities of the country will compel, the people to select our route as the only one which can be carried. But knowing and believing all this, we yet feel no inclination to engender jealousy and hostility, to do injustice or injury to other sections, or to postpone to a future indefinite day a magnificent work which a frank spirit of conciliation can consummate at once.

There is however, a serious difficulty which lies in the way of all the three routes proposed. This difficulty neither originates in sectional or party causes. It operates quietly and silently to the detriment of any plan for a railway, over the whole Union. It is the opinion *that Congress has no constitutional authority to construct works of this character within the bounds of Sovereign States.* It is needless for us to attempt to argue or even to give an opinion upon this constitutional question. Whether the opinion be right or wrong,—just or fallacious,—well or ill fortified by authority, can make no difference so far as we are concerned. It is a fixed fact that it has always existed and has been acted upon by a large number of our public men in their official capacity; and that a very large portion of the American people, perhaps even a majority of them, sanction its validity. If the friends of a Pacific Railway are wise and discreet they will take advantage of the existence of this opinion to come to a fair understanding, instead of permitting it to hang as a millstone about the neck of the project, and we say to them that nothing is easier than to do this if they will only divest themselves of sectional and personal motives, and resolve to act in good faith for the advancement of the cause.

Three important objects should be kept steadily in view, in fixing upon the route and the details of this work. The first object is that of *empire,* the second that of *nationality,* and the third a *revolution in the commerce of the civilized world.* To the world at large the last mentioned object is of the greatest consequence, but for us, the preservation of our dominions, and the perpetuity of the Union take precedence. We have endeavored to prove conclusively that the entire plan proposed by us is better calculated in all respects to secure to us our colonies upon the Pacific coast than either of the other two, and that it is better adapted to meet all future contingencies and conditions of our territory and population. With a route from Memphis to California, the territory of Oregon cannot be united to us but by another full line of railway from the Mississippi to the Pacific; and with the route proposed by Mr. Whitney, the branch to California must cost fourteen millions of dollars more than upon the scheme we have advocated. The consideration of empire then is in our favor. As respects the consideration of *nationality* we think it has been shown that all the great commercial points of the union could be more fairly and equally reached from St. Louis than from Prairie du Chien or Memphis; but we feel no inclination to claim what the other parties concerned may honestly deem a monopoly of the benefits to be anticipated from the construction of the work; and we are willing to take advantage of the existence of the constitutional difficulty already al-

luded to, to make a suggestion which, if acceded to, will unite every friend of a Pacific Railway upon one distinct and clear system, and enable them to compel congress to consummate the work at once.—This suggestion is that the general government be memorialized to undertake the construction of a railway from a point at or near the mouth of the Kanzas river on our western border to the Bay of San Francisco, with a branch to the Columbia river or Puget's sound; and that congress be further memorialized to donate to the States so much of the public lands within their borders as may be needful to aid them in the construction of three branches of the Pacific Railway from the mouth of the Kanzas river to the Mississippi river; the first branch to be taken to St. Louis, the second to Memphis, and the third to such point on the upper Mississippi as will most favorably connect with the great lakes and the lines of railway along their southern shores to the eastern cities.

After mature deliberation we can perceive no plausible ground for objection to the suggestion now made. It frees the whole three schemes for a railway from a serious constitutional difficulty; it will abundantly provide for all the objects desired by the southern states, and give them the additional benefits of a connection with Oregon and a shorter route to China than the one proposed by themselves; it will carry out as completely Mr. Whitney's idea respecting the commerce of Europe with Asia, as his own plan, because the northern branch will reach the South Pass as directly upon this line as upon the line suggested by him; and more completely inasmuch as we have shown a new and shorter route to the mouth of the Columbia than the one down Lewis river;* and finally it adapts itself to the interior improvements of the Union in a manner precisely corresponding to the wishes of the friends of each of the three routes. What say you friends of a Pacific Railway in the north and in the south? Shall we unite upon fair and just principles and hasten the completion of this glorious work? or shall we continue to wrangle about the route without sense or reason, and thus procrastinate it indefinitely? We entreat you to reflect deliberately upon these things, to meet us in St. Louis on the third Monday in October—compare notes with us—and see for yourselves whether our fairness and fidelity can be justly questioned?

The foregoing portion of this article has been principally addressed to the friends of the cause,—those who have read, reflected and written upon the subject, and who have a just appreciation of the magnitude and value of the contemplated work. But unlike the people of Athens of whom the apostle complained that they were ever in chase of "some new thing" the people of the United States slowly and reluctantly suffer themselves to entertain new ideas, or give countenance to novel schemes; and the degree of their reluctance seems to correspond to the importance of the project presented for their considera-

* In a private letter to the author, Mr. Whitney suggested that his road might turn southward after crossing the Missouri, so as to afford an easy connection with St. Louis. The proposition here made precisely conforms to the idea of Mr. Whitney, and of course he must approve of it.

tion. This habitual prejudice of the American mind is derived to us from the race from which we sprung. From the earliest period of Anglo Saxon history, habit and custom has exercised a far more potent influence over the Anglo Saxon mind than reason, hope and faith. It was a sufficient answer to a bill in the English Parliament to say as the Barons many times have said "it proposes to alter the ancient usages and statutes of the realm," and to this day whatever is new is habitually denounced as vulgar and perverse, and consequently unfit to be countenanced by a people who are prouder of the ancestry from which they sprung,than of the personal traits and virtues of their own character. Too much of this spirit is yet visible in American character,—it may be detected in our constitutions and laws,—our religious and our social arrangements,—and until we can thoroughly rid ourselves of it we shall advance but with a Snail's pace in that career of glory and grandeur which science and reason have opened up in the long vista of the future.

The remainder of this article shall therefore be directed to the sound judgment and the practical common sense of all classes of the community. We shall endeavor to show by irrefragable testimony and rigid induction that a railway to the Pacific is not only practicable, but that it is needful to the people of the United States in every aspect in which the subject can be considered,—that the new route from Europe across our continent will inevitably supersede all others and can never be rivalled in the future,—that the route from the Mississippi to the Pacific ocean, will have a beneficial tendency in the preservation of our Union and the impulse it will give to every department of business,—that it can be constructed so cheaply as to justify the expenditure of the necessary sum as a mere commercial speculation,—and that it will exercise a more controlling influence over the future destinies of the human race than any other single work ever achieved by human agency. There are four causes which tend to effect a change in the course of trade; *a saving of distance, a saving of time, a saving in the expense of transportation, and the opening of new markets.* In some instances great changes have been effected by the operation of some one of these causes only, in others two, and in others three; but we may safely defy any one to find in the page of history an example where the whole four causes were combined and failed to effect a change in a reasonable time. An absolute iron despotism may possibly retard the operation of these causes for a brief period as respects the people under its rule, but the invariable and inflexible law of nature will finally conquer even then most vigilant despotism. If therefore the new route proposed from Europe to the Indies can bring to its aid the operation of these four causes, the revolution of the commerce of the world will be as certain as the decree of destiny, and if the structure of the earth is such that no other route can be found to the end of time which can be fortified by these four causes, that revolution will be a final one. and the commerce of the world fixed upon this permanent basis will assume the character of science, and be conducted with regularity, certainty and safety.

With the means of transportation which the genius of modern times

has introduced into the world, but one of the ancient routes to the riches of the east can ever again be brought into use,—the route through Egypt and the Red Sea. No railway can ever be constructed through the swamps of southern, or the mountains of Central Asia; nor if it could, would it compete with the route across our continent for a variety of reasons. The question of route therefore is reduced to a comparison between the "Overland route" through Egypt and the Red Sea, the route discovered by Vasco de Gama, around the Cape of Good Hope, the route across the isthmus which unites the American continent, and the route across the North American Continent. We shall compare all these routes as respects each one of the conditions which we have enumerated as infallibly governing the course of commerce.

1. *The route through Egypt and the Red Sea.* Herodotus states that Nechos the son of Psammeticus, opened a canal from the Nile above the city of Bubastis to the Red Sea (B C 616) which Darius Hystaspes (B C 521) perfected; Aristotle intimates that the work was once commenced but had been abandoned because the Red Sea was more elevated than the Nile; Diodorus Siculus attributes its commencement to Nechos, and its final completion to Ptolemy Philadelphus (B C 280); Strabo corroborates in the main the account given by Herodotus; Pliny asserts that it was begun by Sesostris (970 B C), near Bubastis, that Darius proceeded with it to the Red Sea, and that Ptolemy completed the work, and the Geographer Ptolemy in the reign of Trajan gave this canal the name of Trajan's river. Omar-abor-el-Hattab ordered Amrou who had conquered Egypt about the year 635 B C, to open the canal from the Nile to the Red Sea, for the purpose of conveying the contributions of corn to Arabia; and the canal was finally closed by the Caliph Almanzor. Whether ships passed from the canal into the Red Sea history does not inform us, but there was probably a trans-shipment. It is certain that the canal was abandoned and the commodities of India landed at Berenice some four hundred and fifty miles south of Suez and thence were transported by caravans. Mohammet Ali contemplated re-opening this canal, but was deterred from doing so by an apprehension of its being filled by the sands of the desert. More recently two other projects have been under advisement, the one for a ship canal from Tineh to Suez the other for a railway from Cairo to Suez. The Red Sea has been steadily filling up with coral reefs for the last four centuries, and it is probable that these industrious little creatures will finally close the only European route to the Indies.

From London to Alexandria the distance is	3000 miles.	
Thence to Cairo - - - - - -	112 "	
" to Suez - - - - - -	76 "	
" to the Gulf of Aden - - - -	1420 "	
" to Bombay - - - - - -	1500 "	
" to Calcutta - - - -	1050 "	
" to Canton - - - - - -	2500 "	
		9.658

From London to Alexandria the time for steamers is	20	days.
Thence to Cairo - - - - - - - -	1	"
" " Suez - - - - - - - -	1	"
" " Gulf of Aden - - - - - -	6	"
" " Bombay - - - - - - -	32	"
" " Calcutta - - - - - -	20	"
" " Canton - - - - - - -	40	"
	120	days

2. *The route around the Cape of Good Hope.*

From Liverpool to Calcutta - - -	16000	miles
Thence to Canton - - - - -	2500	"
	18,500	miles

On this route steam vessels cannot be introduced on account of the deficiency of coal and coaling stations. The time for sail vessels from Liverpool to Canton is 170 days.

From New York to Calcutta the distance is -	17,500	miles.
Thence to Canton - - - - - -	2,500	"
	20,000	

The time for sailing vessels to Canton is 180 days.

3. *The route via the isthmus.*

From Liverpool to Panama the distance is	4,500	miles,
Thence to Changhae " "	8,400	"
	12,900	
From New York to Panama the distance is -	2,000	miles,
Thence to Changhae " " -	8,400	"
	10,400	
From Liverpool to Panama the time for steamers would be - - - - - -	22	days,
" Panama to Changhae " "	41	"
	63	days.
" Liverpool to Panama " sail vessels "	55	days,
" Panama to Changhae " " "	75	"
	130	days.
" New York to Panama the time for steamers is	10	days.
Thence to Changhae - -	41	"
	51	days.
" New York to Panama " sail vessels "	50	days,
Thence to Changhae - -	75	"
	125	days.

4. *The route across the American Continent.*

From Liverpool to New York the distance is - -	3,000	miles,
Thence to Puget's Sound - - -	3,000	"
" Changhae - - - - -	5,200	"
	11,200	

From the Bay of San Francisco to Changhae is 5,500 miles.

From Liverpool to New York the time for steam vessels is - - - - 12 days,
Thence across the continent by railway to Puget's sound 7 "
" to Changhae in steam ships - - 18 "
— 37 days.

Or if the Bay of Francisco be substituted for Puget's Sound the whole time from Liverpool to Changhae will be - - 39 days.

From New York to Changhæ via Puget's Sound by railway and steam vessels the time would be - - - 25 days.
And via Francisco Bay the time would be - - 27 "

The time for sailing vessels on the Atlantic and Pacific, connecting with a railway would be from 100 to 110 days.

Now let us compare the new route proposed for the commerce of the east with each of the others named in succession, and see whether it has or has not the advantage in the four conditions which we have designated as governing commercial routes—*Distance*, *Time*, *Cheapness of transportation*, and *New Markets*.

I. RED SEA ROUTE.

1. The route via the Red Sea to Canton is *shorter* than the one across our continent, from Liverpool by 1542 miles; but it is longer from New York, than the route across the continent by about 1500 miles. If therefore the routes were equal in respect to the other three conditions, the one via the Red sea would be the preferable one for Europe and the one across the continent for the United States. But this is not so, for

2. The trip can be made across the continent of America by steam vessels and railway eighty-three day's sooner than it can be made via the Red Sea, in steam vessels, with a railway through Egypt. We have no means of comparing the time for sail vessels in this comparison. Without a satisfactory explanation it may seem strange to the reader that a route having so much the advantage in *distance* as the Red Sea route has should yet fall so short as respects *time*; but the reason of this disparity is perfectly conclusive and is besides, one which must exist for all time to come. There is a constant current from Bombay westward to the African coast,—with this current the trade wind coincides,—and steamers in passing out of the mouth of the Red Sea have to strike nearly south by east several hundred miles to escape this wind and current. In the Indian Ocean between Sumatra and the African coast and from 20° south latitude to the arctic coast, including the Arabian Sea and the Bay of Bengal the monsoons blow from September to April north east, and from April to September they veer to the southwest, and move in with the land to the west southwest. Another monsoon blows from April to October S. S. west between Madagascar and the African coast, and from October to April resumes the direction of the trade winds blows north east. A monsoon of less strength occurs in the Chinese seas extending from Sumatra to Japan, blowing in various directions, but generally from north to south. And lastly the great Equatorial currents of the Pacific blow westward from America and strike the coast of China, and

rush down that coast to the peninsula of Asia. These causes must forever prevent this route from competing with ours as respects time.

3. The causes already enumerated are all, sufficient to satisfy the world that in *cheapness of transportation*, the route by the Red Sea can never rival the one across our continent, for the dangers and difficulties of navigation as well as the time expended, must forever preclude such rivalry, and

4. The route by the Red Sea can never create a new demand or open a new market, because the want of facilities in time and cost of transportation will operate as a perpetual bar.

2. CAPE OF GOOD HOPE.

This route is 7,300 miles longer from London and 11,300 miles longer from New York, and according to the estimates of Mr. Whitney it cannot compete with our route across the continent in any one of the four requisites insisted on, Mr. Whitney says: —*

"The saving in time, so all important to the merchant, giving him the control of markets, would force commerce over this route even at much higher tolls or freights than for the present routes. Freights in ships are charged by measurement of 40 feet to the ton, while on railroads it is by weight only. Young Hyson teas are of the heaviest description, but require two tons measurement for one ton weight, Now from Shanghae to the terminus on the Pacific, $7 per ton measurement would be a large freight, compared with this to Europe; thence to Lake Michigan, 2,000 miles, at a half cent per ton per mile, would be for a ton measurement, a half ton weight, $5; and stopping here, as would all for the consumption of the Mississippi valley, would be $12 only, and $15 less than if by the present route. From the lake to the Atlantic cities 1,000 miles (roads to earn dividends) at one cent per ton per mile, for the half ton weight $5 more, together $17. For the present voyage around the Cape, $22½ is but a fair freight, and often much higher."

3. THE ROUTE VIA THE ISTHMUS.

1. This route is 1500 miles longer from Liverpool than the one across the continent and 2500 miles longer from New York. Should the English Government acquire the right of way across the isthmus of Tehuantepec, the difference of distance would then be reduced to from five to seven hundred miles. With this inconsiderable difference of distance, the advantage which the English possess in cheap wages to seamen, and cheaper outfit in other respects, might enable them to compete with the new route across the continent unless upon the latter the tollage is reduced to what is only necessary for repairs. Hence the importance of enforcing the declaration of Mr. Monroe respecting the further colonization of the North American continent by European powers.

2. With steam vessels and the Railway the trip across the continent can be made in twenty three days less time than via the isthmus of

* We make the following extract from Mr. Whitney's pamphlet page 37. We understand that Mr. Whitney is an accomplished merchant, and his character for veracity and fairness is calculated to inspire the fullest confidence in his statement of facts in respect to commercial matters.

Panama, and in twenty one days less time than via the isthmus of Tehuantepec; or in other words three trips can be made from Europe to China across the continent, as soon as two can be made via the isthmus. This advantage of time in a commerce like this is one of the very first importance. Where the trade is inconsiderable, time is an element of no comparative consequence, but where as in this case a trade will certainly be opened for which it will be difficult for the world to supply carriers, time is a consideration of such consequence, as to give a decisive preponderancy to the route which possesses the advantage of it; even when the distances approach equality.

3. Cheapness of transportation depends partly at least upon the hazards to be incurred by the carrier. The hazard to be anticipated in steam navigation from Europe to and from the isthmus is very considerable,—much more than would be incurred upon the route across the continent. On the other hand the cost of transportation on a railway across the continent is somewhat greater than upon one across the isthmus. The expense of trans-shipment will be the same upon both routes.

4. The route across the isthmus will not open a new market for any considerable quantity of the products either of European or American industry. The products of agriculture especially will not bear carriage through the tropics.

It may possibly enlarge the demand in some small degree for some articles now carried into the Pacific. The route across the continent not only enlarges the demand for such articles as are now carried into the Pacific and to the East Indies; but it absolutely opens up a market for the products of European Manufacturing Industry, and the products of American industry, agricultural as well as manufacturing, with the exception only of hemp and cotton, and even these articles may find a new market upon our western coast.

We extract the following paragraphs from the report of senator Breese chairman of the committee on public lands to show the opinion of the committee in respect to the nature and extent of the new markets which would be opened to us by a railway across the continent. The committee had access to every source of information that could be desired and appear to have examined the subject in all its aspects. Speaking of the Chinese the committee say:

"They take our lead and copper, our ginseng, furs, and our flour, and if we could send to them short of the long voyage twice across the equator, (almost sure to destroy all produce, animal or vegetable,) they would take our Indian corn in any quantity, our rice, our tobacco, our pork, beef, hams, and lard. All foreigners now there, depend upon us for these articles, as well as butter and cheese; both of which, your committee are informed, being sold frequently at one dollar per pound. It appears that in 1838 they commenced taking leather and hides from Russia; the amount more than doubled in four years, As they keep but few animals, they cannot supply themselves with leather; and this is no doubt the cause why it has not been in general use; but should its use increase as it has commenced, the demand will soon become very great, and to us alone must they look for a supply.

The committee have mentioned a few leading important articles; but should we succeed in opening a direct way whereby a free, frequent, and cheap exchange could take place, they fully believe the variety on each side would be endless, and the amount without limit; and we should have an advantage over the present sea-voyage, or any other route or channel, which would be incalculable, and will all pass, both ways, in north latitude from above 30° to above 40° so that teas and other products, our Indian corn, flour, beef, pork, hams, butter, cheese, &c., &c., will escape the great danger of injury and destruction from the long sea-voyage around the cape, or any route twice across the equator."

We have now made the comparison between all the routes in use and the routes proposed, and we have found that in the four conditions which always have governed and in the nature of things must govern the route for commerce, the new route across our continent has a decided advantage over all others. We conclude therefore that those inflexible and eternal laws which Providence has instituted for the regulation of commercial affairs, will divert the commerce of the east from all other channels to the one across the American continent. Whether this result is to come sooner or later may depend in a great measure upon ourselves,—upon our readiness to conform to the order of events as they have been arranged by Divine Providence; or upon our disposition to delay, to thwart, and to embarrass the natural progress of events. A change in the route of commerce to the east has been decreed by the *fiat* of destiny,—and although human effort may procrastinate, it cannot finally prevent the grand result.

An objection which has been started to this great project deserves serious consideration, because it has tended more than almost any thing else to create an apprehension in the popular mind, that a railway to the Pacific is impracticable; and because we have seen even in the halls of Congress, motions made and long debates carried on upon the hypothesis that the objection was a valid one. And, moreover, the advocates of a southern route, without reflection or knowledge of the fact that the route proposed by them is as open to attack upon this ground as a more northern one, have urged this objection with great pertinacity. The objection is, that a railway would be rendered useless for the greater portion of the year by snows in the mountains. If the difficulty were an insuperable one, it would apply equally to all routes, for the mountains of New Mexico are as elevated as those farther north, and the descent of snow is governed by elevation and not latitude. Indeed if there be a difference, snow falls in greater quantities in the southern portion of the temperate zone than any where else, as Humboldt has remarked. But the objection is entitled to but little consideration. In the first place, *dry* snow constitutes no greater impediment to a railway car, than a shower of Eiderdown; and *wet* snow is rarely if ever seen one hundred miles west of the line of the State, and north of the 37th parallell. South of that line the fact may be different. In the second place, we can easily escape all trouble with the snows, by elevating our railway a few feet above the surface. This has been done by the Emperor of Russia

upon his grand Central line of railway from St. Petersburg to Moscow, and this line of railway commences near the 60th and terminates about the 55th deg. of north latitude, nearer the arctic circle than our northern line across the Rocky mountains. With an elevated railway, a *scraper* preceding the wheel of the car is all-sufficient; to keep it clear.

The means of construction.—We are satisfied that the people of the United States can never be prevailed upon to give their consent to a Bill, which proposes to raise the means of constructing a railway to the Pacific by an increase of the duties on imports and exports; although we of the west would cheerfully give our consent to this or any other constitutional method which promises to yield the requisite means. Our opinion here expressed, is founded upon the history of the past. The union of these States was once in imminent danger of being severed, because the people of the southern States deemed themselves unjustly mulcted and oppressed by a protective tariff, which they alleged operated solely to the advantage of the north, and prejudice of the south. To propose, therefore, to raise by means of duties several millions of dollars over and above what is needful for the current expenses of the Government, would again open the door for the adoption of that line of protective policy which has already engendered so much dissatisfaction, and he understands but little of human nature who does not perceive that when this temptation is presented it will be eagerly seized. Hence we infer that the whole of the southern and perhaps some of the northern States would be found in opposition to a railroad bill sustained by this system of raising the necessary means of construction; and our opinion in this respect is fortified by the expression of a like opinion by two congressional committees, the one of the Senate, and the other of the House of Representatives.

It was this difficulty respecting the means which suggested to Mr. Whitney the plan which he has urged upon the attention of Congress and the people, from the year 1840 up to the present time. But there are many controlling reasons why the plan of Mr. Whitney, as it now stands, can never be adopted. The people of the United States will never consent that a magnificent project which promises to effect more for ages to come, than any other material improvement which the genius and the labor of man has ever erected; and which connects itself with their wants, their interests and their national glory, shall be undertaken and carried out by a single individual. But were it possible that the nation could be brought to such a surrender of national pride, the plan of Mr. Whitney could never receive its sanction on other accounts. According to this plan Mr. Whitney may construct the work only as far as it suits him and there abandon it, if he finds it unpromising. And lastly, Mr. Whitney can give us no assurance that he will live to complete this great undertaking, and consequently, the single accident of his death may frustrate the whole design after millions of dollars have been wasted upon it.

Only two other plans for raising the means of construction, have as yet been presented for public consideration, and these with those al-

ready noticed, probably include every plan which can be proposed. One of these propositions is to borrow the money on the credit of the United States, in like manner as monies are raised for the prosecution of war; and the other to set apart a portion of the proceeds of the public lands for the purpose. The first proposition is substantively the one suggested by W. A. Bayard & Co., P. P. F. Degrand, Esq., of Boston, and all the other projectors who desire Congress to incorporate a company for the construction of the work. The second proposition is the one proposed in Senator Benton's bill. It may well be doubted whether acting in good faith it would be strictly constitutional to borrow money for this purpose. The power to borrow money at all was bestowed upon Congress *out of the necessity of the case.* The framers of the Constitution rightly apprehending that cases of sudden emergency would occur in national progress where national existence might be endangered, if this power was not lodged somewhere, judiciously selected Congress as the safest depository of it. But to administer the extreme medicine of the constitution as daily food,—or in plainer language to wield for ordinary objects a power only designed to be exercised in extraordinary contingencies,—if within the *letter* of the Constitution is scarcely in accordance with its spirit.

The public lands then constitute the only fund which can be resorted to for the construction of this great work consistently with the spirit of the constitution and the interests and harmony of the several States of the Union. Fortunately, the authority of Congress over the public lands not having been derived to it originally by the express delegation of power in the constitution, but by compact with the States; and those portions of the public domain not thus given in trust by the States, having been acquired by treaty, the authority of Congress, in respect to this domain, has never been looked upon by any party as limited on the same strict principles which are held to limit other branches of national authority. From the adoption of the constitution up to the present time, the authority of Congress to donate the public lands for purposes of internal improvement, and to donate them so as to aid such works even within the States themselves, has been recognised by all parties, and this authority has been continually exercised at almost every session of that body which has been held. On the other hand, the difficulties and mismanagement in the administration of the public lands has been a constant source of bickering, bargain, intrigue, and party strife. So great has been the annoyance arising from this source that divers schemes have been suggested to rid the nation of this troublesome trust. Mr. Van Buren once proposed to cede them conditionally to the States in which they lie. Mr. Calhoun proposed to present them to the States in which they lie, as an absolute gift, to rid the federal government of the corruption engendered by them; and Mr. Clay introduced a bill to divide the proceeds of the sales of them among the several States, which, after exciting an embittered controversy through several sessions, was finally defeated by the veto of President Jackson.

We consider the portion of the proceeds designed to be set apart by Col. Benton's bill, as insufficient to construct the railway. The whole

of the proceeds of their sale have not averaged as much as $3,000,000 for the last ten years; and even this sum is manifestly insufficient. It must be recollected, too, that the military land claims created by our late war with Mexico, must diminish the annual revenue arising from these lands for several years to come. To meet the question of a Pacific railway then, as a practical question, and one *ripe for immediate* legislation, we will offer a plan for raising the means of construction, which we deem free from all constitutional difficulty, and which we think must meet the approbation of all parties.

Let the Congress of the United States donate to the States through which the three branches of the railway herein proposed to be constructed, shall pass, so much of said lands as in its judgment may be just and needful as an aid to them in the construction of these branches, leaving the construction of the branches altogether to State authority, and also the subsequent management of them. Then let the whole of the public lands of the United States, east and west of the Rocky mountains, be set apart by act of Congress, as the basis from which to raise the means of construction. Let the requisite sum be raised in the United States or in Europe, upon the pledge of the public faith, that the whole proceeds of the sales of the public domain shall be devoted to the payment of the interest upon the sum advanced together with so much of the principal as the annual proceeds of the sales will meet over and above the interest until the whole debt is finally extinguished.

The cost of a railway from the mouth of the Kanzas river to the Bay of San Francisco, 1936 miles, at $20,000 per mile (a liberal allowance) will be - -	$38,720,000
The cost of a branch from the northern bend of Humboldt river to Puget's Sound, 420 miles, at the same rate, will be - - - - - - - - -	8,400,000
Whole cost -	$47,120,000*
To build this road in ten years, the sum to be raised annually would be - - - - - - -	$4,712,000
The annual interest upon this sum will be - - -	282,720
The annual interest upon the whole sum of $47,120,000 will be - - - - - - - - -	$2,827,200

If the whole sum were borrowed at once, then, it is probable that the annual proceeds of the sales would overpay the interest. But when it is considered that only the sum of $4,712,000 need be borrowed each year, the capacity of the lands to yield the requisite means will be made palpable; for a large portion of the principal of the first sum

* Senator Breese, in his report, estimates the cost of grading and bridging (except bridging across the Mississippi and Missouri rivers) at $5,000, and a superstructure for a single track, tunnels, stations, &c. at $10,500 per mile. Of course, no reliable estimate can be made as to cost; $20,000 per mile, has been assumed as the cost, for the purpose of illustrating the writer's proposition. Those who may think it either too high or too low, can adjust the subsequent calculations accordingly.

can be paid, as well as the interest, before it becomes necessary to raise the sum for the second year's operations. And it must be recollected, too, that the public lands along the line of the branches through the States, and along the line of the road westward, will be improving in value as the work progresses, and thus add much to the capacity of the fund to meet the liability incurred. We think it is as clear as reason and arithmetic can make any proposition, that the public domain will certainly yield the necessary means for this work; and that, moreover, after this sum has been expended for the road, the remaining portion of the public domain will be so advanced in value by the construction of the road, that the road itself will *absolutely cost nothing*. If this be so,—and we are sure the more the question is discussed, the more clearly it will be proven to be the correct view,—what excuse is there for farther delay in the prosecution of this scheme? and how much are we losing in national power and progress by procrastination? In closing this branch of the subject, we must be permitted to do an act of justice to some persons whose motives and designs have been questioned without just cause by individuals,—some of them in high places,—from whom a criticism upon personal conduct and personal integrity comes with but an ill grace. We allude to Messrs. Wilkes, Palmer, Whitney, Bayard, Degrand, Carver, and other meritorious individuals who have spent time and labor in the advocacy of this great measure. So far from deserving censure, we think these citizens deserve eminently well of the country; and we will add, that when the construction of this great work is undertaken, it will be only an act of simple justice, in contracting for it, so to arrange the patronage connected with it as to give ample remuneration, in a pecuniary point of view, to all those who have labored for its promotion.

We have traced the commerce of the East as far into antiquity as the light of history sheds its beams; we have seen that in all ages it has constituted the governing element in the commerce of civilized nations, and that neither the dangers of the sea nor the terrors of the desert were sufficient to deter the adventurous and the enterprising from the prosecution of it. With the treasures derived from this commerce deserts have been fertilized and cities built up, as if, by the fabled virtue of the lamp of Aladdin; it created kings and princes, built navies, and clothed and equipped armies; and it has introduced and sustained civilization, science, and the arts, wherever it has been carried. For the control of this commerce, centuries of rivalry, intrigue, and naval and military contest, has been carried on, and powerful princes and great nations have eagerly struggled; and to the end of time it must continue, as it has ever been, "the brightest jewel in the diadem of commerce." The reason of this is clear and palpable. The jewels, the precious stones, the teas, the porcelains, and the spices of the Indies, may be imitated, but they can never be rivalled or superseded. The soil of other regions has ever refused to produce such of these articles as are of spontaneous growth, and ages of practice would be requisite to acquire the mechanical skill needful to compete with those which manufacturing genius creates.

To acquire supremacy in eastern trade, various routes of travel by sea and land have been sought out and adopted in the course of centuries. With our geographical and statistical knowledge, we may calculate with the certainty of science, that one, and but one other change in the commercial route to the Indies can ever be made. The progress of events is rapidly hastening the consummation of this great change. When it is consummated the commerce of the world with this great balance wheel fixed upon a permanent basis, will assume the regularity and certainty of mathematics, and the world will be freed from all those sudden changes, and perpetual, and unanticipated fluctuations and revulsions, which have hitherto rendered all commerce a species of gaming, and been the prime cause of all the depravity of principles with which we are afflicted in the common intercourse of life.

Were the civilized world swayed by but one political authority, this final change in its commerce would have been effected long since; for since the discovery of this great continent, there has scarce been a time when this change might not have been made with safety, security, and profit. The unexampled growth of the United States in population, and resources, agricultural and manufacturing skill, has already advanced us to that point in our national progress, where works of this vast character become necessary to advancement in arts, and in arms,—in commerce, and in industrial and intellectual pursuits. A magnificent work which promises to change the destinies of the civilized world, but which the world cannot construct for want of a controlling political authority; is within the power, and has been shown to be within the resources of the United States; and the question for us to decide, is whether we will convert all Europe into tributaries, and develop by the same act all our own rich resources; or whether we will supinely overlook for generations to come, the grand results to which the completion of a Pacific railway must lead with as much of certainty, as the ends of divine Providence are worked out by second causes? We cannot and will not believe that the American people are so blind to the plainest indications of common sense,—so dead to the inspiring impulses of a glorious ambition. With the energy, and the means within their control, they will be false to those principles of progress which have hitherto impelled them, as if by the hand of Omnipotence, in the race for supremacy; and a thousand considerations of interest and duty appeal to them against further delay.

The advantages to be anticipated from the construction of a Pacific railway, are some of them immediate and temporary, whilst others are comparatively remote, but permanent. Among the first of the temporary benefits to be looked for, is the employment the work will afford to large numbers of working men; who are now engaged in pursuits which are not sufficiently diversified to be productive. Thousands of our own native population, as well as thousands daily landing on our eastern shores from Europe, would be benefitted by the employment thus afforded them; and the food and clothing needful to their sustenance and comfort, would create a demand in the vicinity of the work, highly beneficial to those from whom the supplies are to

come This is but one of the temporary advantages of the work, but we have not space to dwell upon these. We must pass on to the enumeration of those benefits which are to exercise a beneficial and durable influence upon the interests of the American people.

The construction of this great railway, will afford an opportunity for the investment of large amounts of capital which are now seeking investment, in Europe and America, in works which promise to yield reasonable profits, and which are amply demonstrated to be safe; — by multiplying the facilities of getting to a market the capital and labor now unproductively employed in seeking one, would be applied to the production of wealth; and this would successively multiply the products of agricultural and manufacturing skill; — the value of the lands in the vicinity of the road, would be instantly enhanced in consequence of the additional facility for finding a market; — the construction, care, and repair of the railway, will give steady employment to a permanent force of able bodied men, and this force again will create a considerable demand for the necessaries and comforts of life; — it will treble the interior trade of the whole Union, by giving a new impulse to all our industrial pursuits, and bringing into market many articles of consumption which cannot now be profitably exchanged. in consequence of the deficiency of commercial facilities; — thousands of square miles of land will find a profitable market, and be made to yield the elements of comfort and happiness. which otherwise must remain unimproved and unproductive for an indefinite period to come; — it will diversify the pursuits of our people. and thus save large sums which now seek a foreign market, and by introducing a greater variety into the agricultural and other industrial products of the country, exchanges will be multiplied; —it would give occasion to, and justify the construction of branch lines of railway from all sections of the Union, and these improvements would multiply indefinitely all the products of labor and skill, and diffuse a greater quantity and variety of the luxuries and comforts of life throughout the Union; and finally it would elevate our national pride, stimulate our national energies, and consolidate our national character.

Should the Electric Telegraph be constructed forthwith across the continent, as there is every reason to believe it will be under the authority of the Congress of the Union at its next session, the enterprising individuals who stretch the wires, will seek out of course the shortest and most practicable route for this great railway, and ere the immense work shall have been begun, a broad belt of civilization will span the continent, diffusing its wholesome principles and habits among the wild races who roam over the boundless plains of the west, and preparing in advance for those who are to construct the railway all the comforts, and necessaries needful to aid and sustain them in the prosecution of the work. This belt will go on widening and widening until the vast pastoral region spread out between the line of the States, and the base of the rocky mountains will be brought into cultivation, and herds and flocks, and rural beauty, and domestic happiness, will diffuse themselves over the whole land; whilst within the recesses of the mountains where rich vallies, beds of coal,

and a variety of minerals abound, water-power without limit may be found to develop the resources of nature; and a social and political edifice, with towns and cities will spring up to rival all that oriental story has told us of power and magnificence.

Our colonies upon the Pacific are the nurseries of political principles and the harbingers of human progress. But a brief period will elapse ere the laws of commercial intercourse will have brought them into intimate communion with other and powerful forms of civilization. Our national glory requires that these great colonies shall be preserved to us; we must overleap those great mountain barriers, which it was once thought nature herself had erected to separate nations from each other; and we must not permit the thronging millions who are destined to fringe the Pacific, to grow up into power and splendor as aliens to our institutions, laws, and principles, and rivals and enemies in trade,—but we must unite them to us by common sympathies, opinions, habits, laws and constitutions, that civil and religious liberty, the life springs of all our prosperity may diffuse their invigorating influences from the Atlantic to the Pacific, and give to the whole continent one motive power. To do this a band of iron must be made to span the continent.

The construction of this road would save annually a very large amount of capital, now lost in the shape of insurances, and by the accidents of the sea, in rounding the tempestuous capes at the southern extremities of Africa and South America. There are too at this time, upwards of three hundred whaling vessels employed in the Pacific. These vessels are compelled to re-cooper once or twice a year. Heretofore they have sought the ports of South America and the Sandwich Islands to do their repairs, at an average cost of one and a half millions of dollars. Let this road be constructed and then vessels would resort to the bay of San Francisco for repairs, because they would there be in direct communication with owners, free from lawless seizures and port-charges; and they would float upon the waters of the Union under the protection of its glorious flag.

If as has been argued, the commerce of Europe with the East Indies and with China, should be diverted from its present channels into the direct route across our continent, the revenue derived to us from thence will be very productive. The value of the vessels of Europe and America now engaged in the trade beyond the Cape of Good Hope is $61,000,000. If this trade is brought across the continent, one half the tonnage would be sufficient to carry it on in both oceans, thus realizing a saving of $30,500,000. An additional saving will be made for hands, insurance, wear and tear, interest &c. of $16,700,000. It is believed also, that the carriage of passengers and mails would yield a revenue of $4,000,000; and that the tolls payable on this road, for all the goods now carried to Europe around the Cape of Good Hope will amount to upwards of $20,000,000.

In our commerce with the East Indies hitherto, the balance of trade has been uniformly against us, and this constant drain of the precious metals has operated to the serious detriment of all other branches of our business. Nineteen thousand and five hundred miles,

the distance from New York to Canton, is too far to carry any other articles than those of light manufacture; and, moreover, the passage through tropical regions would destroy all the products of agriculture and many manufactured ones, even if the Eastern demand for them could justify the expense of transportation. The objection respecting variations of climate apply with full force to the route *via* the isthmus of Panama, and to any route south of the 35th parallel of latitude, and hence another controlling consideration in favor of the route from St. Louis to the Pacific. Another reason why our commerce with the East has been, when considered in connection with other branches of trade, an embarrassing commerce, has been that the jealous despotisms of China and Japan, "The Middle Empire" and "The Gem of the Sea," have studiously labored to exclude "the Outer Barbarians" from any intimate intercourse with their people, or any accurate knowledge of their interior, social and political condition, and varied resources. Ages of occasional contact, aided by judicious and prudential management, have at last obliterated much of this jealous sentiment, and there is now a fair prospect of our being enabled, at an early day, to conduct a free, profitable, and unembarrassed trade with all these people. When this great railway shall have been completed, and a trade *in gold and silver*, superseded by one of *barter*, what an incalculable and inexhanstible field of commerce will be spread out before American enterprise! Contemplate for a brief space the rich and glowing picture.

Of the eight hundred millions of people who inhabit the earth, six hundred are upon the islands and along the coasts of the Pacific ocean. They are very poor navigators, and we should, in a short period, monopolize the whole carrying trade of the Pacific. These people are now subsisted, for the most part, upon rice and pulse. We can take to them meat and bread, and metalic implements, and they will eagerly grasp the proffered benefit. The Russian-American possessions lie a few hundred miles north of our Pacific harbors; Manchooria stretches from Kamschatka to the northern boundary of the Chinese empire, with an extent of 900,000 square miles, traversed by a navigable stream 900 miles in length, and swarming with Nomadic tribes; the islands of Japan, with a population of 50,000,000, with rich mineral resources and abundant products of silks and teas, expand from the 30th to the 50th degree of north latitude; the broad empire of China, with a patient, industrious, and ingenious population of 367,000,000, fills up the whole area between the 20th and 60th degrees of north latitude, and the 70th and 140th degrees of east longitude from Greenwich, abounding in teas, silks, porcelains, sugar, indigo, medicinal plants, jewels, and precious stones; the Sandwich Islands, which are set like "gems in the midst of the sea," bloom with rich verdure, and are laden with commercial treasures, such as coffee, sugar, bread, fruit, &c., with a population of 108,000 people rapidly transforming under the civilizing influence of commerce, into a moral and religious people; the Polynesian islands, with abundant natural resources, are inhabited by 1,500,000 people whom commerce will soon reclaim from barbarism; New Guinea, with 305,540 square miles of territory and a hardy

population, needs only the energizing influence of trade to render it a treasure-house of commerce; the great continent of Australia upon the 10th degree of south latitude, and between the 113th and 153d degree of east longitude with an area of 3,000,000 of square miles, a colonial population of 160,000, and a native one of 60,000, is the centre of a group of islands with a population of 1,000,000 of souls, is rich in extensive beds of coal and varied tropical products; Java, Sumatra, and Borneo, from whence the rich and pungent spices of the East send forth upon the seas their rich odors, with an aggregate surface of 504,000 square miles, and an aggregate population of 12,000,000 of people, with good harbors, and every desired facility to invite our enterprise; the Phillipine Islands made immortal by the genius of Le Sage, the island of Singapore at the extremity of the Malay peninsula, and the whole west coast of the New World, multiply the new sources of American commerce; and lastly the broad, calm and beautiful expanse of the great ocean of the west, conceals beneath its glowing surface various and exhaustless treasures. Is not such a trade as this an object worthy of American energy and enterprise, and of the genius and patriotism of American statesmen?

More than thirty centuries have passed away since the human race separated upon the plains of Western Asia. Taking up their line of march towards the rising sun along the great table lands of Central Asia, much the large portion of them distributed themselves over that great continent, descending in detached parties as they moved eastward to the frozen plains of Siberia and the brilliant and blooming Savanna's which stretch towards the Indian Sea. Another great emigration moved westward along the narrow isthmus which unites the Asiatic and the African continents into Egypt and Abyssinia from whence they have been distributed in the progress of centuries over the rugged mountains and burning plains of the torrid zone. The third and last, taking the sun as their guide, surmounted the stupendous chains of the Ural and Caucassian mountains, and descended upon the temperate, and fertile, and diversified surface of Europe. Time, climate, and the various operations of causes having their origin in the physical structure and peculiar localities of the different portions of the globe have all tended to introduce into each of these great sections of the human family an infinite diversity in languages, laws, religion, morals, habits and social and political polity. In the far east a torpid and lifeless form of civilization which lives upon the past, and is blind to all the prognostics of the future, has grown up, diversified by a variety of practice and of external display, but deriving all its vitality from one common fountain. The characteristic features of this civilization are the absolute rule of the despotic principle, a deep and fervent reverence for the past, a tendency to attribute to that past the creation of every thing needful for the security and happiness of mankind, an absolute incapacity to perceive how the types and shadows of experience point to and elucidate the dark vista of the future, and a settled antipathy to whatever is new or novel or in contrast to the system in which it lives and breathes. In the interior of Africa a rich soil and a burning sun forces into life a boundless pro-

fusion of vegetation, and stimulates into vitality appetites and passions, generative of every variety of disease and vicious inclination, and the intellectual and moral faculties are degraded from their natural position of supremacy into active instruments of all the baser passions. The Caucassian race alone seems to have discovered how the experience of the past may be interpreted into prophetic revealings of the future, and hence with this race alone has the principle of *progress* operated steadily and permanently in the growth of its civilization.—They alone have extended the dominion of man over nature,—have penetrated the mysterious laws of the physical and moral universe—have rendered these laws subservient to their advancement in all those arts which tend to elevate the human mind and develop its great faculties—and have interpreted from the wondrous features of the universe the will of that Great Being who launched the whole system into existence.

The tendency of the operation of all *physical causes* is to introduce diversity,—division is naturally evolved out of diversity,—another step creates jealousy and strife,—and the final result of all these successive causes is the reign of ignorance, vice, and crime. The tendency of the operation of *moral causes* is to produce unity and harmony of sentiment,—these again create conformity of opinion and concert of action,—these again produce confidence and faith,—and the final result of all these successive causes is the reign of intelligence, virtue, and religion. The history of the human race is made up of the struggles between *physical* and *moral* causes, and the exact stage of the civilization of any people precisely corresponds to the degree of influence which these distinct primary causes exercise over them. The Asiatic peoples, although they have their conditions mitigated in various degrees by the influence of *moral* causes, may yet be said to be under the dominion of the *physical*. With the African races the tendency of *moral* causes can scarcely be recognized at all. But the Caucassian division of the human race stimulated by the principle of *progress* have continued slowly but steadily to rise in the tone of their civilization, until the point of transition has already been passed, the tendency to division, strife and crime, comparatively arrested, and the rapid development of that final form of the world's civilization fairly begun wherin a uniformity of language, habit and principle, and peace, and unity, and religion, and virtue, shall reign undisturbed.

When a direct and rapid means of communication, intellectual and commercial shall be opened across the American continent to the eastern shore of Asia the principle of *progress* will be brought into immediate contact with that of *stability*,—the controlling influence of *moral* with the controlling influence of *physical* causes,—*faith* in the future with *confidence* in the past,—the active passion of *hope* with the passive faculty of *memory*,—and when this conflict is once begun who shall fix a period to it, short of that wherein an entire conquest of the more torpid forms of civilization shall give supreme and eternal dominion to the reign of Truth, Justice and Faith? The superiority of te Caucassian race in science and in the ar ts,—in intellect and h moral vigor,—in energy and in mechanical skill,—in all which givin

compactness and strength to the social state, and all which may be requisite towards the propagation and diffusion of their principles and institutions; will soon enable them to overcome the habitual repugnance to foreign intercourse so characteristic of Asiatic people's.—When this difficulty is fairly surmounted a revolution in their social, religious, and political condition is as certain as the eternal operation of moral causes. The sciences and the useful and ornamental arts will supersede the senseless jargon, the clumsy implements, and the tasteless ornaments of eastern Asia,—labor saving machinery will be introduced,—religion and morals will take the place of superstition and vice—industry and commerce will reciprocally stimulate each other—the principles of constitutional liberty will drive out the principles of despotism,—a general conformity of language, ideas, sentiments, and principles will in the course of ages be diffused over the whole earth, and that millenial reign of peace, truth and religion of which poets have dreamed and prophets have spoken wtll perfect *the permanent, uniform, and final conditions of human society.*

ELECTRIC TELEGRAPH TO THE PACIFIC.

The extension of a line of telegraph from St. Louis to the Pacific ocean being one of the objects proposed for the consideration of the convention, the committee of publication have extracted the following paragraphs from an article addressed to their chairman. Owing to the want of room in the Journal the committee have limited their selection to such part only of the article as refers to the extension of a line of telegraph to the Pacific ocean. After discussing the local advantages to be derived from the establishment of a line from St. Louis to Fort Leavenworth which is now in contemplation, the writer proceeds to remark:

"There is another consideration which must add incalculably to the profits of a line from St. Louis to Fort Leavenworth. There is little or no doubt that the great convention to be assembled in this city on the 3d Monday in October next, will memorialize the Congress of the United States to authorize the extension of the Telegraph to the Bay of San Francisco.

Every public journal and every public man of respectability in the Union,—so far as we have been enabled after extensive correspondence, to ascertain,—is decidedly in favor of it; and we believe the whole people will be found ready to sanction the measure. If the construction of this great line should be entrusted to Mr. O'Rielly or any one of like vigor, intelligence, and promptitude of action, fifteen months will not elapse after the passage of the act ere the whole line will be completed. Those who will not take the trouble to reflect upon the subject, will have a thousand groundless objections to make to this scheme, as ignorance always has to every thing which looks to the future. Now let us see how easy it is to construct, guard,

preserve, and work a line from Fort Leavenworth to San Francisco. For the purpose of affording aid and protection to emigrants and travellers from the western border to San Francisco, the congress of the Union have already appropriated a regiment of mounted men, to be stationed in block houses, several hundred miles apart along the emigrant road to California. One or two companies will be assigned to each post, and at these posts it is expected that provisions and other needful supplies will be collected. The proposition we have to suggest for the consideration of the October convention, the public, and finally of congress, is that, all the purposes designed to be effected by the government shall be far more efficiently, certainly, and beneficially accomplished; and at the same time give ample security to a telegraph line, enable the government to carry a daily mail across the continent, and open up a belt of civilization and industry. The proposition is this :

Let pallisades or sun-dried brick forts be built along the whole route at the distance of thirty miles apart, sufficiently large to hold thirty men and thirty horses, and to give security to travelling parties of one hundred. Station thirty dragoons at each of these posts. Place at each of them a battery and telegraphic instrument. Extend the wires through these posts to the bay. Extinguish the Indian title to the land along the line for one mile on each side of it. Give alternate quarter sections of land on each side of the line to actual settlers, and finally authorize a daily mail across the continent, and require each of the thirty soldiers at a post to carry the mail once in fifteen days, to the centre of the intermediate space, there exchange bags, and then return to their posts. If this whole system shall be carried out by congress, entire security will be given to the wires, they can be quickly re-united if broken,—more prompt and ample protection and aid can be given to emigrants and traders, a broad belt of land will be brought into immediate cultivation, the Nomadic tribes whose game is now rapidly exhausting will be gradually induced to betake themselves to agricultural pursuits, and their condition greatly ameliorated; and lastly when the great project of a Pacific railway shall be determined upon,—which there is reason to believe must be at an early day,—the settlers along the telegraph line will be prepared to furnish the thousands of laborers upon that great work with provisions, shanties, mechanical skill, and many other facilities for the rapid completion of the work. This last consideration it seems to us is one which ought to be of controlling importance; for how difficult will it be to carry so great a quantity of supplies of every description as will be absolutely needed by the hands employed upon so vast a work?

The cost of a telegraph line from Fort Leavenworth to the bay of San Francisco would be about $300,000. In order to ascertain whether this outlay of capital would be profitable to the people and beneficial to the government, let us enumerate some of the facts which have a close bearing on the subject.

We have now in the Pacific about 350 whaling ships, and a large number of vessels engaged in other branches of commerce. In Cali-

fornia alone there will be more than one hundred thousand persons ere another year closes.

The trade to Santa Fe to which a branch line could be constructed at little cost from Fort Laramie now amounts to $500,000 per annum, and there is reason to believe that this trade will be doubled, and trebled in a very short period.

The line will pass by some of the Forts of the fur traders. This trade now amounts to $300,000 and large sums are expended by the traders in sending expresses to St. Louis every season. Of course the telegraph would be substituted for the expresses.

The steady emigration to be anticipated for eight or ten years to come, to the Pacific, will be about twenty two thousand men.

A large naval and military force must be kept up permanently in California and Oregon and they will need the telegraph. These are some of the facts on the subject. Now let us see what reason there is to believe that the stock in such a line would be profitable.

1. The Government sends annually a large number of important despatches and receives answers to them. A single overland despatch will cost the Government about $15,000. Despatches by way of the isthmus are also costly. There can be but little doubt, therefore, that the Government actually expends more cash in two years in sending despatches to California and Oregon, than would suffice to build the whole line across the continent. But say that only one-sixth part of the Government dispatches shall be superseded by the telegraph,

This will give to the line an annual income of - -	$50,000
Suppose a single telegraphic despatch shall be sent by each emigrant to California, 60,000 at $5 each, (very moderate rates,) these despatches would yield - -	300,000
If only every second man sent one, it would yield - -	150,000
If only every fourth man would send one, it would yield	75,000
And if a despatch for every fourth man in California shall be transmitted by their friends here, it will amount to -	75,000
If two dispatches be sent to each whaling vessel per annum, and two more sent from them to owners, these would yield - - - - - - - - -	6,000
If the officers and sailors of the Army and Navy send five hundred despatches to and fro per annum, these will yield - - - - - - - - - -	2,500
If the traders to Santa Fe send five hundred, they will yield	2,500
If the fur traders send one hundred, they will yield - -	500
And lastly, if only one thousand dispatches altogether shall be sent across the line they will yield - - -	50,000

We think, therefore, there can be no doubt that Congress will, at its next session, authorize the extension of the electric telegraph to the Pacific, and we are assured that the great Convention which will assemble in this city in October next, will resolve to memorialize the Congress to that effect. Looking to this grand result, which seems to us so plainly on the very eve of consummation, we confess we have been surprised to learn that men of capital in the towns along the valley of the Missouri should, many of them, express doubts whether

this line will prove a safe and profitable investment. We know of nothing in which capital can be invested which, in our opinion, promises a larger dividend than this line of telegraph from St. Louis to Fort Leavenworth. If it never shall be extended to the Pacific, it will still yield from ten to fifteen per cent. If, on the other hand, it is carried to the Bay of Francisco, it will be the best investment for capital in the civilized world.

LITERARY INSTITUTIONS OF THE WEST.

UNIVERSITY OF THE STATE OF MISSOURI.

We have reeeived the seventh annual catalogue of this institution, and regret that owing to our engagement to publish matter in reference to the Pacific railway, we have not room for its publication. The university of the state of Missouri has a respectable endowment, is located in a healthful part of the state, and in all its appointments, is equal perhaps to any literary institution in the valley of the Mississippi. But with all its advantages a large portion of the people of the west still look to ths east for education, and would as soon think of dressing their daughters in linsey woolsey, as of sending their sons to a western university.

We give the following summary of the different classes,—seniors 12, juniors 7, sophomores 12, freshmen 22, preparatory 26, irregulars 9, 88 in all; and but 53 in the collegiate department. When we consider the means that have been appropriated to the establishment of this institution, the time it has been in operation, and the talent, learning, and high moral qualities of the President, and the untiring zeal with which he has labored to build it up, the result appears discouraging beyond measure.

It would seem that the people of Missouri, have resolved that neither the properties of matter, nor mind, shall be developed in this state by their agency.

JONATHAN JONES' COMMERCIAL COLLEGE.

It affords us pleasure to record the fact that the literary institutions of the city of St. Louis are in general liberally encouraged, and that all departments of education are gradually taking root, and promise a steady and vigorous growth.

Among all the various institutions of learning, there is, perhaps, none in which the pupil can acquire so much useful knowledge in as short a time, and at so little expense, as in a commercial school. Every youth in the community, no matter what may be his condition, should resolve to avail himself of the advantages of a commercial education. Mr. Jones, the founder of the Commercial College in this

city, has been eminently successful as the teacher of a private commercial school, and under the present organization his institution is placed on a footing as respectable, perhaps, as any commercial college in the Union. *The professor of commercial law*, F. M. Haight, Esq., is an accomplished and able lawyer, and would do credit to the law department of any university in the United States.

We trust the young men of St. Louis will not fail to avail themselves of the opportunity which this college affords of acquiring an accomplished business education.

UNIVERSITY OF LOUISVILLE.

We have received the circular of the law department of this institution, but we have room only to mention that the fourth session will commence on the first Monday in November next. The professors in the law department are the Hon. E. M. Ewing, L. L. D., Hon. H. Pirtle, L. L. D., and Preston Loughborough, L. L. D. The fee is $20 to each professor; and the matriculation fee, $5.

TO OUR PATRONS AND CONTRIBUTORS.

The present number does not contain so great a variety of matter as we have usually furnished our readers: several of our regular departments have been omitted for the purpose of giving place to Mr. Loughborough's article on the Pacific railway and telegraph. The publication of this article has also occasioned a delay in the appearance of the work. We trust however, that our patrons will consider themselves fully compensated by the elaborate and able treatise to which we have alluded.

It may be that some of our readers do not feel as much interest in the construction of a railway to the Pacific ocean as we do, and may therefore not feel inclined to read so long an article; but we beg that none will neglect to read it on account of its length, for we believe that no individual who loves his country, and desires to see it excel all others in whatever contributes to national glory, and renown, will think this document too long.

For the same reason we have been compelled to postpone the publication of a number of valuable communications,—which we very much regret—but we trust that our friends will appreciate the cause of their delay, we will endeavor to give them a place in the next number.